# HYGEIA

## THE HEALTH MAGAZINE

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### WHO'S WHO IN THIS ISSUE

DR. ARMITAGE WHITMAN, who writes in a lively vein of the difficulties of attaining good posture, is an orthopedic surgeon attached to a hospital for the ruptured and crippled. The amazing liver treatment for a dreaded disease is explained in detail for the first time in HYGEIA by DR. JULIAN W. BRANDEIS, an eastern specialist in internal medicine.

DR. WINFRED OVERHOLSER is director of the division of the Massachusetts department of mental diseases that deals with the examination of prisoners. JOHN M. GIBSON has frequent occasion to observe phthisiophobia at work, in his capacity as editor of the sanatorium magazine published at the North Carolina Sanatorium at Sanatorium, N. C.

Historical research yielded interesting medical facts about famous persons, which are presented by DR. JAMES O. NALL, of the staff of *The Journal* of the American Medical Association. DR. LOUIS SCHWARTZ concludes an article describing a few of his experiences as an examiner of immigrants for the U. S. Public Health Service. JAMES A. TOBEY is well known to HYGEIA readers as a writer on health subjects. He is editor of departments dealing with health in the *American City* and the *American Journal of Public Health.*

DR. ARTHUR J. CRAMP, director of the Bureau of Investigation of the American Medical Association, describes some of the excellent educational work of his department. The Harvey series on anatomy, written by a professor of anatomy in a large university medical school, continues to evoke interest. It will probably be published in book form after its appearance in HYGEIA.

MARGARET CRAWFORD STEFFENS is a Chicago writer specializing in household topics. DR. ARTHUR TORRANCE is an English physician, an eminent student of tropical diseases. DR. H. J. CORPER is director of research of a large hospital for tuberculosis in the West.

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*Clemens Gretter*

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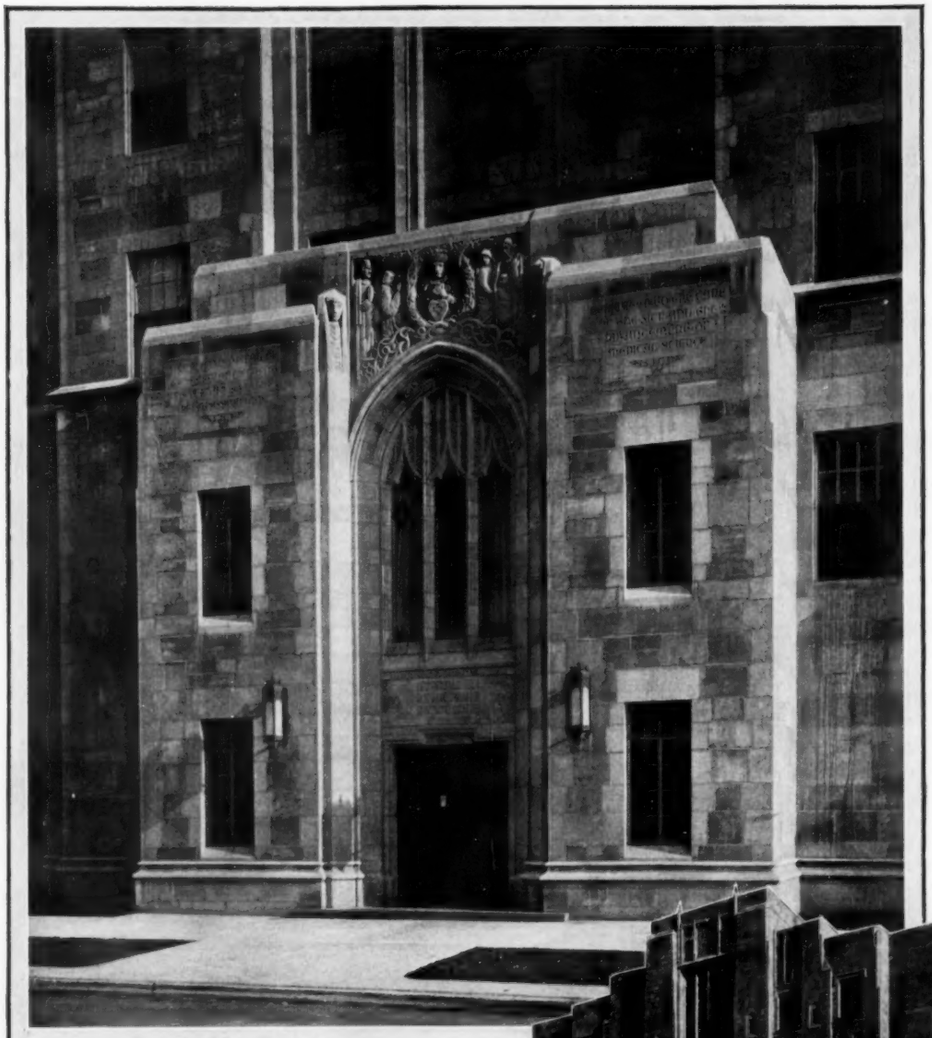


# Temples of Healing

II. Passavant Memorial Hospital, Chicago

# Proper Posture

*John Jones has good posture.*

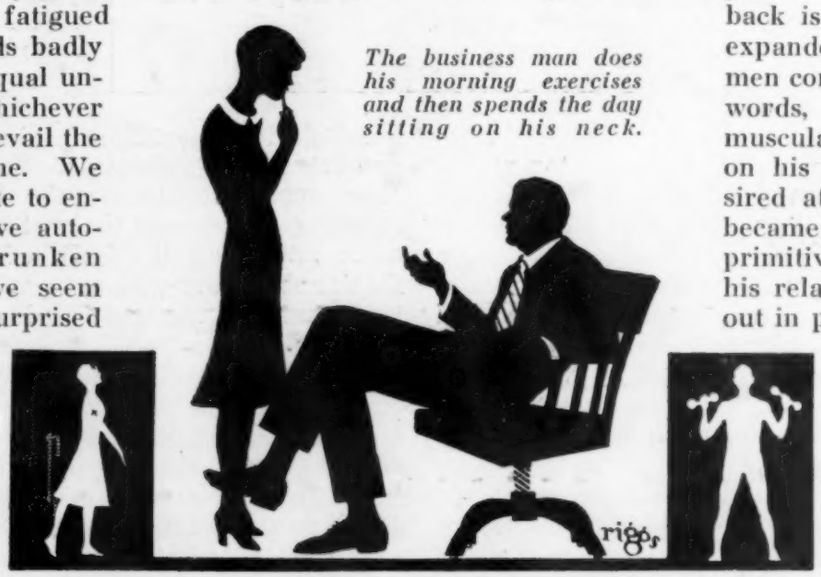
*Joan Jones has bad posture.*

## By Armitage Whitman

WHAT is good posture, what is bad? How may the first be recognized and the second assumed? How may we transform a round-shouldered, pot-bellied, hollow-backed, knock-kneed, flat-footed child into a self-respecting physical and mental specimen that we can regard not only without a shudder, but perhaps even with some pleasure?

The Oxford dictionary defines posture as an attitude of body, or of mind. To most of us the idea of its being an attitude of mind comes as a distinct surprise, but to me that idea is the most important feature of the entire subject. The proper importance of the mind in its relations to disease is only too rarely recognized. "Mens sana in corpore sano" has been quoted so glibly that it has lost its significance. The Greeks used to indulge in profound discussions as to which came first, the chicken or the egg. The discussions that now rage as to whether a child stands badly because he is fatigued or whether he is fatigued because he stands badly seem to me of equal unimportance. Whichever advocate may prevail the result is the same. We should all hesitate to entrust an expensive automobile to a drunken chauffeur, but we seem none the less surprised at the ruin of a good body by the fatigue-intoxicated mind. To simplify the problem further we should all prefer to be driven in an old Ford by a sober and competent chauffeur. Similarly, given the mind—the "will to win," as Marshal Foch would have said—the proper physical development from a possibly inferior beginning is comparatively simple for any one to achieve.

*The business man does his morning exercises and then spends the day sitting on his neck.*




The assumption of the upright attitude by man was unnatural. Whether it was to satisfy his acquisitive instincts and free his hands for the finer grasping movements that man first stood on his hind legs, or whether, as later students of the development of the brain tell us, he came down from the tree, is interesting but unimportant. The fact is that when man first stood on his hind legs he undertook the hardest battle—sin not then having been invented—of his life: the battle against the force of gravity.

Any battle against a constant, unremitting force is fatiguing. Primitive man was a simple creature who lay down when he was tired and thus had the sense to dodge the force of gravity. When a person lies supine on a flat surface his back is flat, his chest is expanded and his abdomen contracted. In other words, he is, with no muscular effort whatever on his part, in the desired attitude. When it became necessary for primitive man to give up his relaxation and to go out in pursuit of food he had to watch his step. Not only did the pursuit and capture of game necessitate speed, but the constant

menace of annihilation at the hands of some larger brute kept him continually alert. In other words, primitive man was always at his best from the postural standpoint, because whether he was tense or relaxed, he was always in what can properly be termed the attitude of activity.

The attitude of activity may best be defined by means of the mental picture that each of us conjures up. One person may have an image of a tennis champion, another of a fencer. In general the salient features are that the given individual carries his weight slightly forward on the balls of his feet and his feet rolled over somewhat to the outside. The forward inclination of the trunk flattens the normal lumbar and dorsal curves of the spine. The chest is expanded, the abdominal muscles are contracted, the head is up. He is tense, he is alert, he is prepared for any mental or physical emergency. His gait is catlike.

This attitude is maintained only at the expense of active, more or less conscious muscular effort, and when the muscles tire, as all normal muscles do, it is succeeded by the attitude of fatigue. When the muscles are exhausted the weight of the body is sustained by the bones and ligaments. The person stands as a skeleton would stand if it were propped up. The feet are turned out so that the weight falls on the inner border and are spread wide apart, so as to give the greatest width and stability to the foundation. The knees tend to fall together. The back sags, the belly protrudes, the chest is flat and the head flops forward. The gait is heavy and noisy. The picture is that of the paralytic or the drunkard. The picture is that of 75 per cent of the population.

The primary explanation is simple enough. Normal life consists of alternating periods of activity and fatigue. The one is as natural and to be expected as the other. The remedy for fatigue is to resign for the moment from the struggle against the force of gravity and to follow the example of primitive man by lying down. Then one is, without effort, still in the active attitude. The primary cause of bad posture, then, was the invention of the chair. Fatigued, we continue the struggle against the force of gravity in an upright or semiupright attitude and the physical result is only what we might expect.

It will do no harm occasionally to remember as we struggle against bad posture that the instruments whose availability we should most appreciate are space, fresh air, sunshine and—most important of all—the opportunity and the ability to relax.

Dismissing this vision with a sigh, let us make use of a detestable advertising phrase and admit to ourselves that as salesmen of posture to the public we have succeeded badly. Authorities the world over are agreed, and doubtless have been for centuries, on the causes of bad posture and the desirability of good posture. But the public slouches along paying no attention to the admonitions of authority. Children come to hospitals for scientific exercises and slouch to and from the gymnasium. The tired business man conscientiously does the daily dozen every morning and spends the rest of his day in the office sitting on the back of his neck. The fashionable young woman whose counterpart ten years ago was striding busily about, erect and snappy in a Red Cross uniform telling her unfortunate ununiformed friends that for the first time in her life her feet were comfortable, is now teetering on French heels, her delicately rounded belly thrust forward to become her most prominent feature. Unquestionably the fashion of the day is the débutante slouch.

*(Concluded in the next issue.)*

## Posture Briefs

*MOST writers on posture, according to Dr. Louis Schwartz of the U. S. Public Health Service, who has made a survey of all the important material published on the subject, are agreed upon the following conclusions:*

1. *The biped posture of man has been evolved from the quadruped posture.*
2. *The body has not yet fully adapted itself to the biped posture.*
3. *There are many physical disadvantages in the erect posture, but they are outweighed by the physical and mental advantages resulting from it.*
4. *Good posture can be attained by having good health, taking enough exercise to keep the muscles strong and the joints supple, and continually assuming correct positions in the daily task.*
5. *Fatigue is the most constant cause of postural deformities in the industries.*
6. *Continuous sitting or standing in any one position is fatiguing.*
7. *Change of posture at the will of the worker is the remedy for industrial fatigue.*
8. *Industrial furniture should be so constructed as to fit the individual worker and to allow comfortable working conditions in both the sitting and the standing posture.*

# THE CONTROL OF *Pernicious Anemia*

By Julian W. Brandeis

DISEASE often presents insurmountable barriers to a frontal attack. In such emergencies, it is sometimes possible to execute a flank movement by which the foe may be quite as effectively routed, although no opportunity may be afforded to establish its identity. For example, the manner and circumstances in which infection occurs in certain diseases are frequently recognized long before the offending micro-organism is detected. In this event, prophylaxis serves to protect society until tardy science dons its seven league boots. The history of diphtheria, syphilis and scarlet fever illustrates this.

It may happen that a therapeutic measure capable of controlling a disease is in use long before the causative factor, or even the manner of its transmission, is suspected, as was the case in the use of cinchona to combat malaria, following its introduction by the Countess of Chinchon more than two centuries before the epochal work of Laveran and Ross.

### *Liver Feeding Introduced*

Sometimes all the anatomic and physiologic changes associated with a pathologic picture are long known and thoroughly studied without either the causative factor or the essential nature of the disease coming to light. Then one day progress is made, when tireless research succeeds in indicating a drug or a food that appears to supply the factor that the organism lacks, even though nothing further of the nature of the ailment is revealed. Such is the case in the recent introduction of liver feeding in the control of pernicious anemia by George R. Minot and William P. Murphy of Harvard University.

In the issue of *The Journal* of the American Medical Association for Aug. 14, 1926, Minot and Murphy announced the results of a diet "composed especially of foods rich in complete proteins and iron—particularly liver—and containing an abundance of fruits and fresh vegetables and relatively low in fats" in the care of forty-five patients suffering with pernicious anemia. These patients, who were observed over a period varying between six weeks and two years, showed practically uniform improvement.

Clinically, there occurred an amelioration of the symptoms of the disease, beginning promptly after the institution of the liver therapy, so that the patients expressed themselves as feeling "better than for two years," and "stronger than after the two times that my blood went low before." The latter commentary calls attention to the fact that spontaneous remissions occur in pernicious anemia uninfluenced by any treatment whatsoever and the authors at the time of the publication of their protocol freely admitted this but they were able to offer a tabulation of red blood cell counts which showed clearly that the remission induced by the liver treatment is regularly "heralded in the peripheral blood before the end of the first week by the beginning of a most definite rise of the reticulocytes (young red blood corpuscles)."

Furthermore, a summary of the blood cell counts made in their series showed that in these remissions there had occurred a greater rise, longer sustained, than had been the case in any of the previous remissions that these patients had experienced. The table showed that, beginning with forty-five cases and ending with twenty-seven under observation at the end of six months, the average number of red blood corpuscles had risen from 1,450,000 to 4,500,000 in a cubic millimeter of blood. As we shall see, the results announced so modestly by these investigators three years ago have been since completely confirmed by others.

### *Liver Prices Soar*

The first inkling that the general public had of this new means of combating pernicious anemia came to it over the butcher's counter. Apparently some one had cornered the liver market. The price of that commodity was rising, sometimes it was not to be had at any price. One customer after another clamored for her supply and investigation revealed each to be the mother of an anemic child. Deductions and surmises based on such information soon precipitated an epidemic of amateur liver cures, during which every pale or weak man,

woman or child endured a daily quota of liver in the expectation that a magical transformation would ensue. The wiser among these experimenters consulted their physicians and learned that while the addition of liver to the diet may favorably influence the more ordinary blood impoverishments, the work of the Harvard investigators had shown a specific benefit of the diet only in a special and severe form known as idiopathic, or pernicious, anemia.

Pernicious anemia was first described, in 1849, by Addison (not the one more familiarly known to readers of these pages) as a "general anemia occurring without discoverable cause whatever, cases in which there had been no previous loss of blood, no exhausting diarrhea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous or malignant disease"—in brief, none of the recognized causes of a secondary anemia. It is a widely distributed disease, occurring in all parts of the world and quite common in the United States. Largely, it affects persons of middle age and males more frequently than females.

### *Addison's Description of the Disease*

Perhaps, as Osler says, the description given by Addison of the afflicted person offers as clear a picture as possible of the disease. Besides it will afford an example of delightful medical style.

"It makes its approach," he says, "in so slow and insidious a manner that the patient can hardly fix a date to the earliest feeling of that languor which shortly is to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted, the pulse becomes large but remarkably soft and compressible. . . . There is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness in attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth and waxy appearance; the lips, tongue and gums seem bloodless, the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene, breathlessness and palpitations are produced by the most trifling exertion or emotion; some slight edema is probably perceived about the ankles; the debility becomes extreme —the patient can no longer rise from bed; the mind occasionally wanders; he falls into a prostrate and half-torpid state, and at length expires; nevertheless, to the very last, and after a sickness of several months' duration, the bulkiness of the general frame and the amount of obesity often present a striking contrast to the failure and exhaustion observable in every other respect."

Meantime, the most characteristic finding is in the altered condition of the blood. The number of red cells falls from normal to a million or less per cubic millimeter of blood, while the hemoglobin content decreases not quite in proportion, so that each globule contains a relative excess of coloring matter, a distinguishing feature from other anemias. The appearance in the blood stream of various abnormal and undeveloped red blood cells serves further to characterize the disease as also do the lemon-yellow tint of the skin, the diminution or disappearance of the digestive secretions from the stomach and various disturbances of the central nervous system. Such is the dismal picture of the disease that has apparently been brought under control by the simple expedient of liver feeding.

## THREE YEARS MAKES

*"It is generally speedily fatal."*

*So the medical textbooks declared in 1926, when speaking about pernicious anemia. But in the same year, Minot and Murphy announced the favorable results of feeding liver to patients with that disease. Now patients recover!*

*Nobody knows what causes pernicious anemia. It is a chronic disease of a progressive nature. The number of red cor-*

The germ of the idea of liver feeding in anemia dates back exactly one decade. Of course, the value of a rich diet in improving the condition of the blood has always been appreciated, and from the time that Addison described pernicious anemia this means has naturally been employed in the hope that this idiopathic anemia would also react favorably; but the results have been disappointing, to put it mildly.

In 1918, Whipple, Robscheit-Robbins and Hooper induced anemia in dogs by bleeding, placing them subsequently on a diet of beef liver. They found that this procedure resulted in a "maximal regeneration of hemoglobin and red cells." This suggested to them that the normal liver is concerned with pigment formation and serves as a storehouse for that substance. A few years later, Whipple added that food factors might be expected to have an important effect in the control of pernicious anemia as well, and he further suggested that in pernicious anemia there may be lacking the material necessary for the formation of the body of the red blood cells, if, indeed, an actual disease of the elements of the bone marrow concerned with the building of the red cells did not exist.

Following these announcements, there came various experiments by others to check Whipple's results, among which perhaps the most

## A BIG DIFFERENCE

*corpuscles is greatly diminished and there are other easily recognized symptoms of its presence.*

*The pernicious anemia patient of 1929 does not even have to face a daily half-pound of liver in order to combat the disease. He can take his liver portion in extract form, either liquid or powdered.*

*Three years can make a big difference in dealing with disease.*

notable are those of Gibson and Howard, who published, in 1923, some metabolic studies in pernicious anemia that estimated the value of a diet rich in vitamins, as well as in fruit, green vegetables, egg yolk and liver, showing that considerable improvement occurred. Nevertheless, when Minot and Murphy approached the subject, the general opinion prevailed that the ordinary simple anemias were those that should prove most amenable to a diet in which liver predominated. Minot and Murphy, on the other hand, directly attacked the problem of pernicious anemia. In their original paper they quote a statement made by McCollum to the effect that liver and kidney furnish an exceptionally high quality protein, which serves to increase remarkably the growth of animals, and proceeding on Whipple's hint that there may be a scarcity, in pernicious anemia, of the material from which the framework of the red cell is built, they conclude that "perhaps liver and other foods rich in complete proteins may enhance the formation of red cells in this disease, especially by supplying material to build their stroma." Clearly, their experiments were based on logical induction and they merit high praise for their accomplishment.

### *A Liver Extract*

The next step in advance came with the isolation from liver tissue of the effective fraction in blood regeneration, and this was accomplished, in 1927, by E. J. Cohn and his associates of Boston and Randolph West working independently in New York City. This achievement has not only supplied a more palatable substitute for the cloying half-pound daily regimen of liver, but since its use in pernicious anemia is equally as effective as whole liver, a concrete demonstration is afforded of the existence in liver of a substance quite as specific in its effects as the vitamins in various deficiency diseases.

At the meeting of the American Medical Association held in 1928, various papers were presented that covered many phases of the treatment of pernicious anemia by liver diet or the use of a potent extract in its stead. The unanimous opinion expressed at this symposium was that the value of this measure had been adequately established. Ordway and Graham of Albany offered a summary of the results obtained in 578 cases reported from reliable sources, including hospitals and clinics in England and Germany as well as the United States. Of these, 397 had been treated with liver and 191 with liver extract. Uniform and remarkable improvement occurred in all those who carried out the treatment adequately and faithfully.

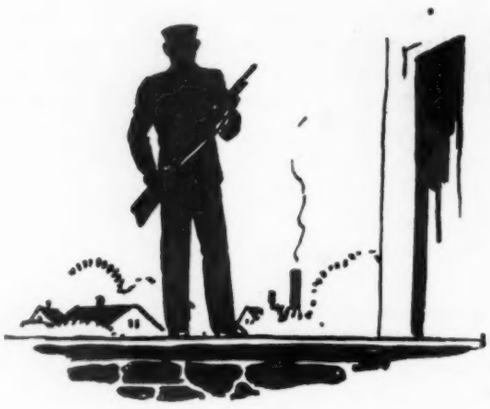
The patients were under observation for periods varying from one to twenty months. Taking the red blood corpuscle count as the most reliable index of progress, the entire group presented an average of 1,500,000 cells in a cubic millimeter of blood at the commencement of treatment and practically every case attained a level of 4,000,000 cells in the same blood volume at the close of observation.

All clinical evidences of the disease tended to disappear, except that the secretion of hydrochloric acid in the stomach was not resumed and symptoms which are dependent upon organic changes which have taken place in the central nervous system naturally persisted. Liver, the conclusions read, furnishes an element apparently lacking in the economy, which is necessary to proper blood formation, but it appears in no way to affect the underlying pathologic process.

### *Theories about Pernicious Anemia*

In an excellent paper, presented at this same symposium, Means and Richardson of Boston consider the deductions as to the nature of pernicious anemia that can be made in view of what has so far been learned. In the first place, they feel that "pernicious anemia is in some sense or other a deficiency disease rather than an infectious, toxic or neoplastic one, as had previously been supposed; but it seems doubtful that it bears more than a slight resemblance to any other of the deficiencies with which we are familiar."

Apparently the action of liver is not due to any of the known vitamins and while conceivably it might harbor an undiscovered one, still any of the known avitaminoses, such as scurvy, can be induced by withholding the natural source of supply, while the absence of liver (or kidney) from the diet does not cause pernicious anemia. Therefore, it can only be ventured that "in persons who develop pernicious anemia on what would be an adequate diet for the majority of mankind, there must be either some internal obstacle to the acquisition of the specific substance or, because of some preexisting abnormality, an exaggerated requirement for that specific substance."



# The Sanity of

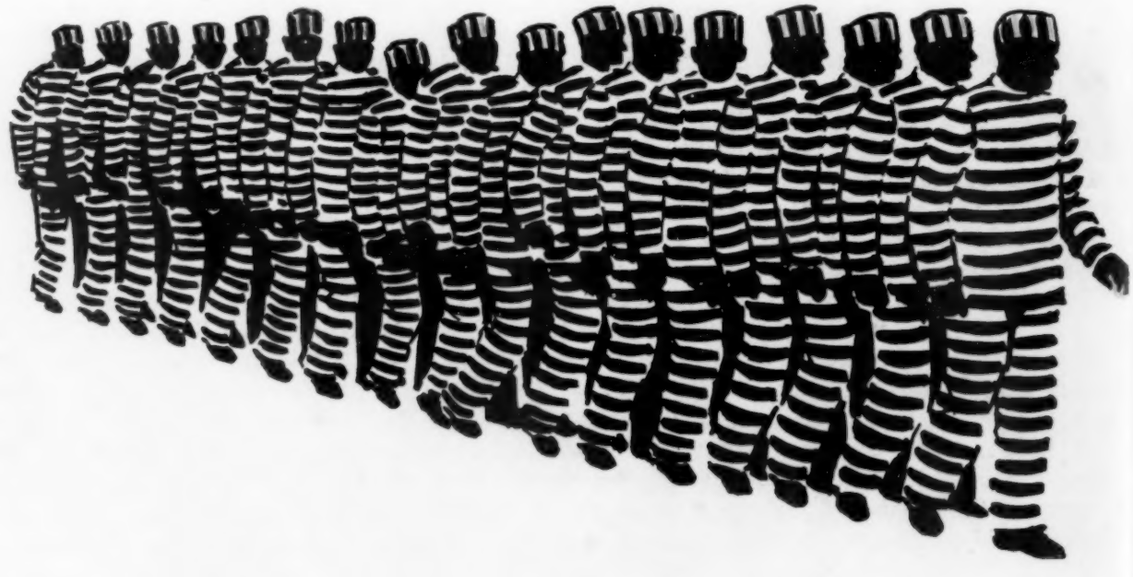
By Winfred

DURING the past few years, a great deal of public interest has been exhibited in matters relating to crime and to court procedure. Although this interest has existed, some of the sources of information that have been tapped have been prejudiced or otherwise unreliable, with the result that many misapprehensions are current regarding various institutions connected with the criminal law. This is perhaps as much true of the psychiatrist, or alienist, or mental expert (as he is variously termed by newspapers and the public), and his function as it is of any aspect of the entire system.

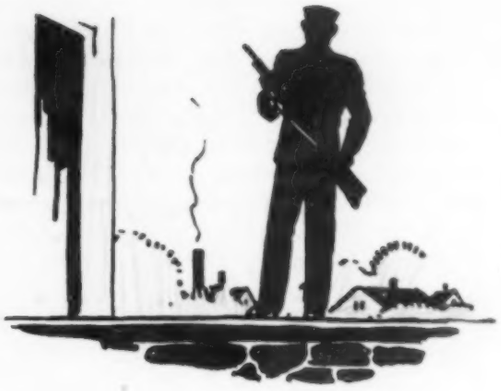
More recently, too, public attention has been directed to the psychiatrist's possible functions by the proposal of former Governor Smith of New York that the disposition of the cases of convicted felons be determined by a board of psychiatric and sociologic experts rather than by the judge. It may, therefore, be opportune to discuss briefly the purposes of psychiatry as applied to the treatment of offenders against the law. The history of the development of the treatment of offenders is most interesting in itself, but it can only be touched upon here.

At the time of the French Revolution and shortly afterward, what is known as the classical school of criminology arose. The thesis of this school was that a definite sentence should be imposed for a particular crime; that is, the offense itself was what was punished. Logically, it made no difference who committed the offense, whether a normal individual, an insane person, a child or an animal. There are cases on record of the solemn trial of dogs and horses; they were sentenced and punished as if they were human beings. It was soon seen that this system could not be logically carried out, and some modifications were made concerning children, the insane, and, of course, animals, the limited responsibility of these groups being recognized.

About fifty years ago another school of criminologists known as the positivists developed under the leadership of Lombroso. The main tenet was that the offender was a person actuated by various motives and more or less subject to these particular motives on account of his heredity and environment; that as a result, therefore, the treatment meted out to him by the court should be based on a study of the indi-



# the Criminal



## Overholser

vidual rather than on the particular offense he had committed. The teachings of this school have had a measurable influence on the development of the criminal law both on the European continent and in this country, and are largely responsible for the origin, for instance, of the indeterminate sentence, probation and parole, reformatories and institutions for defective delinquents and alcoholics, and similar methods of treating criminals.

The influence of the classical school still persists in the form and substance of many of our laws, notably those that call for a certain penalty for a certain offense. The question may well be asked what assurance can be given that a sentence of a fixed length will have the desired effect in all cases. Just as some patients with pneumonia are able to leave the hospital in a few weeks while others linger there for months, so with the offender. In some instances, probation, a fine or a short sentence will have the desired corrective effect, whereas in other cases the termination of even a lengthy sentence finds the offender, on account of some mental aberration or personality defect, practically certain to repeat his offense.

Those who decry the proponents of the individualization of penal treatment as "sob sisters and brothers" omit consideration (intentionally or through ignorance) of the fact that the latter, who advocate what some choose to term "lenient" treatment for hopeful cases, are equally earnest in contending that the demonstrably unreformable offender should be segregated for life.

Even legislatures and the courts have not been ready to accede to this proposition, which would do much toward protecting society. It should be borne in mind in this connection that the nature of the offense is not always a criterion of an offender's possibilities. Comparatively trivial offenses may be committed by a man who has serious criminal potentialities and who for the protection of society should be segregated for an indefinite period. It would seem to follow that if our object in the handling of offenders against the law is, instead of mere vengeance, a desire by dealing intelligently with the offender to protect society the better, some means of understanding him should be provided. It is here that the psychiatrist enters the picture.

The English criminal law, which we follow in large measure, has long recognized the existence of insanity; that is, mental derangement of such degree and nature as to negative that "criminal intent" which is an element of the more serious crimes. The insane offender was considered to be not responsible and therefore not punishable. He was, although not punished by execution or imprisonment, confined "at His Majesty's pleasure" in an institution for mental cases; that is, in what was then called, although the term is now with the advance of medicine practically obsolete, an asylum. The courts recognized, too, the necessity of having the benefit of the advice of trained men in matters that were beyond the normal scope of the courts' knowledge and did not hesitate to seek such advice on their own motion. Among these matters were those relating to mental disease.

With the changes that took place in the method of trial by jury in the latter part of the eighteenth century, the evidence of these trained men, or experts, began to be introduced by the parties to the case instead of being sought by the judge. Almost immediately this partisan method of presentation had its effect—the experts were found to be biased and were considered unreliable, with the result that juries tended to disregard their testimony.

### *Why Testimony of Experts Differs*

The "battles of experts" of which we read today are not peculiar to our time; they existed nearly one hundred years ago. The supposed venality of the experts, however, is one of the least of the causes of the present disrepute of expert testimony. Honest differences of opinion exist in medicine as in all professions, even that of the law! Then, too, the methods of introducing evidence, with hypothetical questions that are often warped to suit the propounder's purpose and the attempts of the counsel to secure "yes or no" answers to questions that cannot be adequately answered that way are but samples of the manner in which the rules of evidence may serve to conceal rather than present the truth. The lawyers must accept at least a share of the blame for the undesirable status of "opinion" evidence as distinguished from evidence as to observed facts.

Another point to be observed is that psychiatrists are far from being the only types of experts involved in litigation. In civil cases we have, for instance, experts on engineering and real estate values, and in criminal cases we find experts on firearms as well as surgeons and pathologists. The defense of insanity, however, has been offered in some peculiarly notorious cases (some of the most barbarous crimes, of course, are committed by the mentally abnormal, so that the public has perhaps a warped idea of the psychiatrist's rôle in criminal cases.

The courts and legislatures have not been blind to the fact that improvement is urgent, and various plans have been devised whereby reliable, impartial advice may be available to court and jury, especially on the subject of the defendant's mental state. Some of the plans proposed have been cumbersome, and most have been expensive. With one outstanding exception, all have been open to the objection that the desirability of examination must be claimed by some one not a physician (lawyer, jail officer or judge), so that no assurance can be given that a mentally ill defendant may not, from lack of recognition as a mental case, be put on trial and sentenced as if normal. That this very thing, which by all standards must be considered inhuman, has in fact happened is conceded by writers on criminal procedure and by prison officials.

### *"Briggs Law" Is Step in Advance*

The one plan that obviates the objections mentioned has been in force in Massachusetts since 1921 and is generally referred to as the "Briggs Law," after its author, Dr. L. Vernon Briggs. This law provides that all persons charged with a capital offense and certain other persons charged with a serious crime shall be examined by two psychiatrists who are appointed by the state department of mental diseases and paid a small fee by the court regardless of their findings. In other words, this examination is impartial and is not dependent on the claims of defense counsel that the client is, to use the legal term, insane.

In some of these cases that had not been previously suspected, mental disease has been found and in such cases a lengthy and expensive trial has been obviated, as well as the necessity of subjecting a mentally ill person to the injustice of such a trial. The savings effected by a few such cases more than overbalance the comparatively trifling expense of these special examinations. In other cases in which the state psychiatrists have not found mental disease, their evidence on account of its unbiased nature has been of great value as compared with that of other psychiatrists retained by the defense to claim mental disease. This law has almost entirely eliminated the battles of experts of which we hear in other states and which have in some instances certainly been open to criticism.

One reason why the public has become so apprehensive over acquittals by reason of insanity has been that experience has shown that in some conspicuous (though rare) cases the person so acquitted has promptly secured his release, even though found insane by the jury. One thinks in this connection of the Remus case, recently tried in Ohio. We have already seen that in England the detention of

such a person was wholly indefinite, being "at His Majesty's pleasure." Release in such cases was, and still is, slow and difficult and is contingent entirely on the individual's restoration to a condition in which he is safe to be at large. The process of release in many states in this country has proved to be all too easy, sometimes because of a lay jury's proving "easy" and sometimes because a judge, interpreting the letter of the law and the precedents strictly, has chosen to overrule the state's psychiatrists even when they object to releasing the offender.

This loophole can easily be plugged if only the legislatures will act. Already Ohio has profited from her lesson and has made release under these circumstances much more difficult than when Remus was discharged from the hospital. In Massachusetts, as an example, if a person is acquitted of homicide by reason of insanity the judge must commit him to a state hospital for life, and even the governor may not release him until assured by the state department of mental diseases that his mental condition is such that his discharge will not cause danger to others. Such releases have been exceedingly rare.

In other words, the fact that a person accused of crime is found to have mental disease merely changes the place of detention, substituting a hospital for a jail, while at the same time society is thoroughly protected. It may well be, therefore, that in some cases in which a jury might disagree or acquit a defendant if mental disease were not found, the psychiatrist's findings protect society even better than the jury might, by seeing to it that the person who needs hospital care and who is a menace to society is segregated.

Much has been said in recent years concerning the extent of mental deficiency among offenders. So much, indeed, of this sort of innuendo has been put forth that there are some who feel that any person who is mentally defective should be institutionalized. As a matter of fact, the late Dr. Walter E. Fernald, who was undoubtedly the greatest authority on the subject of mental deficiency, demonstrated that the vast majority of mental defectives can be made self-supporting, self-respecting and law-abiding members of the community.

There is a small group among the mental defectives that show almost innate vicious tendencies. This is the group to which is applied the term "defective delinquents." Massachusetts and New York have special institutions for such persons, and Pennsylvania has a law authorizing one. If a person is found to be definitely a mental defective and is found guilty of an offense, he is with certain provisions committed for an indefinite period to an institution in which the training and treatment are particularly adapted to this group. Release depends entirely on the psychiatrists and the probability in their judgment that the treatment has had a beneficial effect. Such release is provisional and can be terminated by return to the institution if it appears desirable.

A survey recently conducted by the National Crime Commission showed that slightly more than one third of the state prisons, reformatories and institutions for juvenile delinquents employ psychiatric services. The reports of mental examinations of the inmates are useful in matters of discipline, classification, occupation and (notably) parole. The logic of the desirability of knowing something about the material with which they are dealing appeals to many prison administrators, and we may expect to see an increased employment of such facilities. In Massachusetts a study is made of prisoners in county jails. As this group constitutes about 90 per cent of all commitments, the importance of such a study is self-evident.

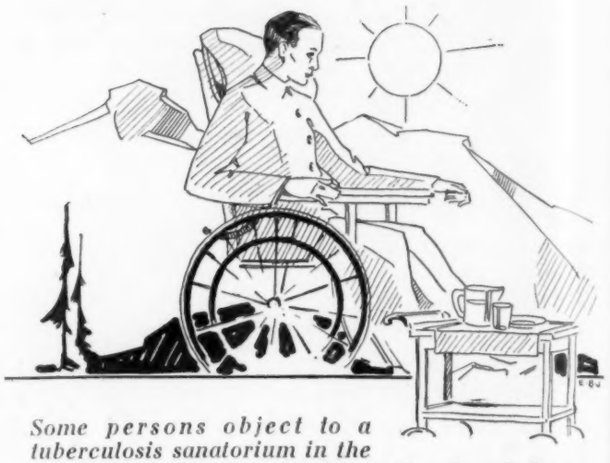
A mental study of the man already sentenced, however, can never be a satisfactory substitute for knowledge by the court of the defendant's mental constitution and social history, and an intelligent disposition based upon such knowledge. This applies with equal force to defendants who are in the eyes of the law "responsible," as having a bearing on the type of institution to which they shall be sent, or what other type of treatment shall be prescribed.

The survey of the National Crime Commission dealt likewise with the courts and showed that slightly more than 9 per cent of the courts use psychiatry regularly as an aid to disposition. It demonstrated effectively that judges, as well as legislators and the public at large, are coming to a realization that a system of dealing with offenders that ignores completely the mental make-up of the offender and makes no effort to suit the penal or correctional treatment to his needs fails not only to do justice to him but likewise fails to furnish to society that maximum degree of protection that is the very reason for the existence of the criminal law. Toward this necessary understanding of the individual the psychiatrist can contribute. Psychiatry is indeed making substantial progress toward recognition as an essential adjunct to the administration of criminal justice.

# One Form of Ignorance—

By

## John M. Gibson



*Some persons object to a tuberculosis sanatorium in the neighborhood, yet in or near such a hospital one is safest from catching consumption. There the greatest possible care is taken with the expectoration, which is virtually the only source of infection. The food served at such a hospital is safer than that at the average hotel or restaurant.*

AN UNREASONING fear of tuberculosis and of the person with the disease has greatly handicapped many a returning patient in his efforts to resume a normal place in the social order and has seriously hindered health workers in their efforts to combat it. This fear prejudice, based on ignorance and known as phthisiophobia, appears to be almost as old as tuberculosis itself, and many of the greatest men and women in history have been embarrassed and humiliated by it.

"There is a strange disease with which not the tuberculous, but the nontuberculous, are afflicted," wrote Dr. S. Adolphus Knopf in one of the sanatorium publications. "It is the exaggerated fear of the presence of any one afflicted with pulmonary tuberculosis. This tuberculosis phobia, or phthisiophobia, has caused and is causing more suffering to the consumptive than it is possible to imagine. People will object even to the presence of tuberculosis sanatoriums and tuberculosis hospitals, and yet the place in which one is safest from catching consumption is in just such an institution, where the greatest possible care is taken with the expectoration, which is virtually the only source of infection.

"Tuberculosis is indeed a public menace, and with the prevalence of the disease we cannot be certain that some day we ourselves or some one very dear to us may not be stricken with it. And yet there is no more danger in association with the consumptive who is conscientious in the disposal of his sputum than with any well person. Therefore, let us treat him kindly and considerately."

### *Chopin Shunned by Islanders*

But experience has shown that, especially until recent years, there was little disposition to treat the patient returning from a sanatorium with either kindness or consideration. For instance, in 1839, George Sand wrote to a friend about Chopin, who had tuberculosis but did not die until ten years later: "Poor Chopin, who had had a cough since he left Paris, became worse. We sent for a doctor—two doctors—three doctors—each more stupid than the other, who started to spread the news in the island that the sick man was a consumptive in the last stages. We were regarded as plague-infected. . . . The owner of the little house which we had rented turned us out brutally. At Barcelona the landlord demanded to be paid for the bed on which Chopin had slept, on the pretext that it must be burned."

### *Fear Still Exists*

Much progress has been made in combating the hysterical fear of the disease since the experience described by George Sand; but there are still many people who cause untold humiliation and embarrassment to patients and former patients. Even now some of them are not regarded as normal human beings on their return home and their former friends and neighbors avoid them as they would a mad dog.

Not only the former patient himself but the general public suffers. The person recently recovered may be forced into unsuitable work and unhygienic living conditions that will result in a serious breakdown and further expense, either to himself or, as is more likely to happen, to the state. Furthermore, by being regarded and treated as a public menace, he is likely

# PHTHISIOPHOBIA

to avoid being tagged as a consumptive by not taking the simple precautions he was taught at the sanatorium. Without these precautions, the patient or former patient may, and probably does, become a danger to others, including of course those whose fears are responsible for his failure to carry out his training.

It has become rare to see automobile travelers place their handkerchiefs to their noses as they approach a tuberculosis sanatorium, but it still happens. Within the past few weeks a young lady, a graduate of two colleges and a successful attorney, spoke of declining an invitation to visit one of her best girl friends because the latter was an employee—not a patient—at a tuberculosis hospital. Not infrequently friends and members of the families of patients go hungry or bring food from home rather than eat in the patients' dining room, which is infinitely safer, from the point of view of health, than the average restaurant or hotel which they patronize.

Dr. McDugald McLean, in his book "Tuberculosis," describes a personal experience while a college student in 1918, as follows: "I sent for the college barber (about two blocks distant from my home) to cut my hair, and he sent word that he personally was not afraid to cut my hair, but that the students had told him that, if he did, they would not patronize him any more. So I had to send to the city (six miles) for a barber."

### *A Letter from Chateaubriand*

His experience with inconsiderate college students must have impressed him very much as more famous men and women have been impressed by their own experiences. His book quotes a letter which Chateaubriand wrote from Rome more than a century earlier (1803), as follows: "I am in great difficulty. I had hoped to get two thousand crowns for my carriages, but, by a law of the time of the Goths, consumption is declared in Rome a contagious disease; and as Madame de Beaumont drove two or three times in my carriages nobody is willing to buy them."

Modern dwelling house owners could recite similar difficulties in trying to rent buildings in which persons with tuberculosis have lived or died. It has been scientifically shown that such a building may be made perfectly safe for well people, safer than most houses usually are, by the simple expedient of scrubbing all the woodwork, furniture, floors and walls with a good disinfectant solution and flooding the rooms with sunlight.

"After having been in close contact with consumptives and after having observed the freedom from tuberculosis of employees in sanatoriums for twenty-five years," wrote Dr. James W. Laws, of El Paso, Texas, in the *Journal of the Outdoor Life* for January, 1929, "it is my belief that adult tuberculosis does not come from association contact with tuberculosis patients, but that it is due to lowered resistance of cells and tissues of a body which has previously been massively infected. The prevention of adult tuberculosis is a question of preventing lowered immunity or lowered cell resistance in the body. Measles, whooping cough, pneumonia, typhoid fever, diabetes mellitus and all depressing diseases should be treated with a longer period of rest, keeping the nutrition of the patient up to the highest possible standard, as otherwise tuberculosis is apt to follow in the wake of lowered resistance."

### *Getting Rid of Fanatical Fear*

Phthisiophobia, being a form of ignorance, must be combated like other forms of ignorance; that is, through education. This is the method of attack being used. A wholesome fear of tuberculosis, which will prevent well people from unnecessary exposure, is advisable. But a fanatical fear of the disease and those having it is unfair to the former patient and likely to do injury to those harboring it.

## THE HEALING TOUCH

By Elizabeth Davis Richards

*To give new hope, when hope is nearly gone;*
*To give new strength, the strength to carry on;*

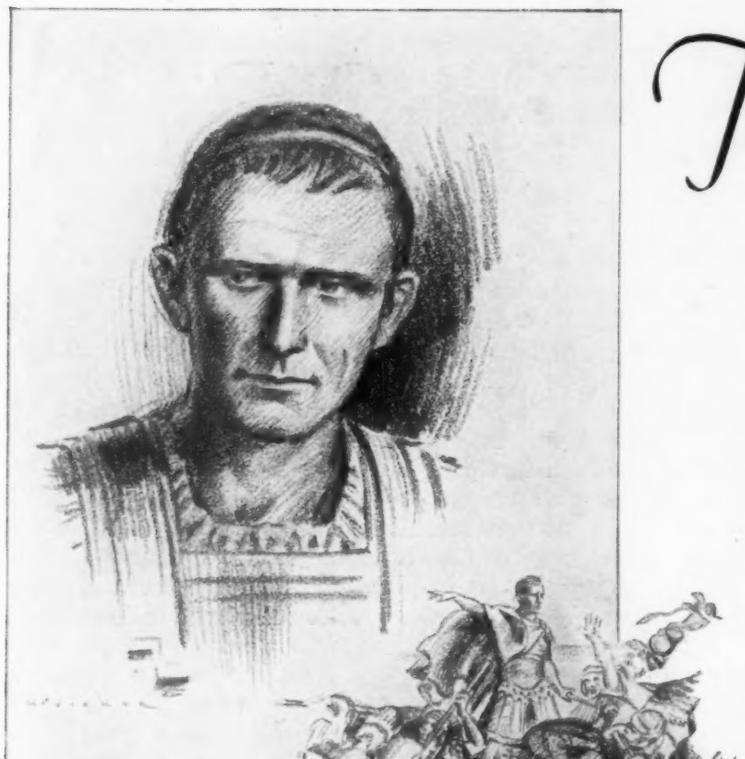
*To give new-born the precious gift of breath;*
*To save the dying from the reaper Death;*

*This is the calling, human yet divine,*
*"He walks within my steps, and he is mine,"*

*The Great Physician said. A kingly gift*
*The healing touch, to bless and to uplift.*

# The Diseases of Characters

By James



*Those who want to believe Caesar had epilepsy are probably not far wrong.*

THE illnesses, accidents and diseases of famous historical characters are of interest to most persons, yet such incidents are not generally known. Some of them are considered of so little importance by biographers that they are not mentioned at all or are tucked away in a footnote. Often if these seemingly unimportant incidents had had the usual outcome, the individuals concerned would not have lived to make a place in history. Take our martyr presidents, for instance: every one knows that they were shot down by assassins yet few know that incidents of almost equal outcome happened to them in boyhood or youth.

Let us review some of these incidents:

As a boy, Abraham Lincoln was kicked unconscious by a mare. It happened one afternoon while he was grinding meal for the family at the neighborhood grist mill in southern Indiana; he was driving the mare, hitched to the mill sweep, when she became unruly and kicked him with such force as to "knock him out" immediately. He was carried home, where he lay unconscious all night, and only gradually came to himself the next morning. Apparently, he was kicked in the head, the unconsciousness most likely resulting from concussion of the brain, as that is a common after-effect of cranial injury.

James A. Garfield was almost drowned in his early youth while working on a canal boat that plied between Cleveland and Pittsburgh. One stormy night while he was tugging at the bow-line it gave way so suddenly that he fell headlong into the water. There was no one near to help him, and he managed to save himself, as the boat was moving over him, only by catching the bow-line which had miraculously caught in a crack in the boat and had trailed down into the water. Later he had a severe siege of malaria and was unable to do anything for six months. Aside from the exposure, which may have lowered his general resistance, the two incidents had no connection as malaria develops only after the parasite is deposited in the body by the bite of the anopheles mosquito.

William McKinley had a narrow escape from drowning during his boyhood in Niles, Ohio. He was in bathing in Mosquito Creek when he got out beyond his depth and was going down for the third time when rescued. A chum who answered his call for help was almost drowned at the same time before they were rescued by a third person. Later, at the age of 17, he had to leave college for a while on account of a severe illness.

While such incidents are not generally known about famous persons who have died violent deaths, they may be known about others. It has been widely taught that George Washington died of diphtheria; but that is now known to be untrue. It is also widely known that he

# of Some Famous in History

O. Nall

*In Napoleon there is not definite evidence of true epilepsy.*

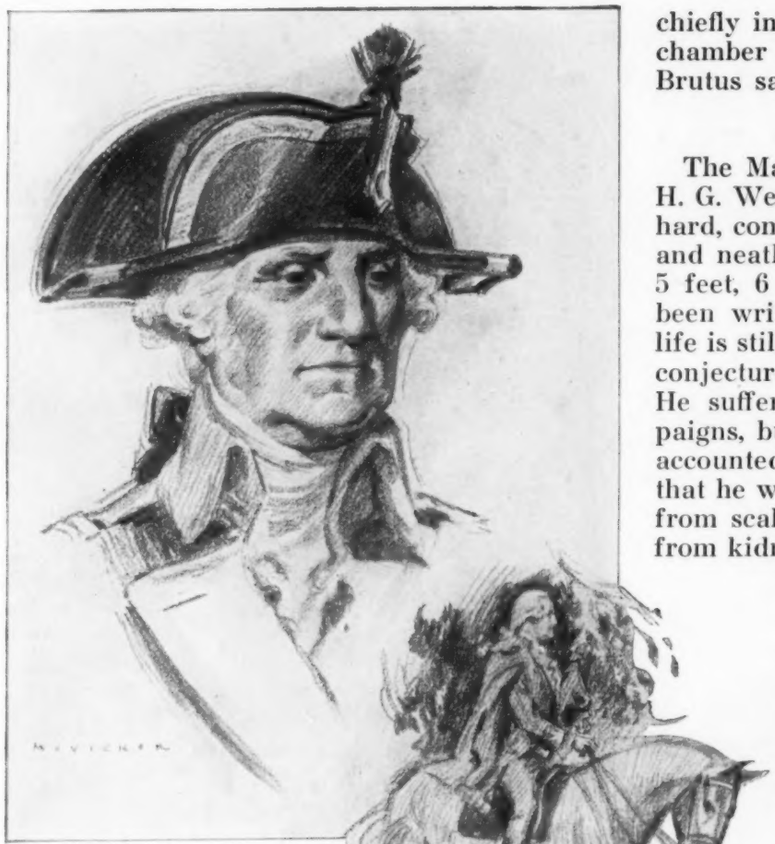
had smallpox and was severely pock-marked. Julius Caesar and Napoleon Bonaparte are supposed to have been afflicted with epilepsy. It is quite probable that Caesar was; he had attacks that suggest epilepsy, although his historians differ as to whether he had them throughout life or only in the last year of his life. The available evidence that Napoleon had epilepsy is insufficient to warrant the diagnosis. The manifestations in Caesar and Napoleon that suggest epilepsy have been attributed by some recent writers to a disorder of the pituitary gland. Nothing was known about the pituitary or its disorders at the time they lived. Thus their physicians were unable to judge them from that standpoint, and all conclusions that have been drawn about them on that basis can only be considered as conjectures. Caesar, Napoleon and Washington are to be considered in some detail in this paper.

### *Julius Caesar*

The idea that Caesar was an epileptic is developed in Shakespeare's famous play. Shakespeare got his information from Plutarch's *Lives*, and from the writings of the Roman historian, Suetonius. Plutarch was a Greek who wrote the biographies of prominent ancient Greeks and Romans. He and Suetonius are two of the best known ancient authorities on Caesar's life, but neither was contemporaneous with Caesar. Their information was obtained from Caesar's writings, and from second-hand sources, and their statements differ in some respects. In the time at which they wrote, after the time of Christ, epilepsy was known as "falling sickness." It is now considered to be only a symptom of some underlying constitutional disorder. The term epilepsy was not coined until about the tenth century. It is derived from the Greek verb, to seize; thus epileptic fits are often spoken of as seizures.

Plutarch's description of Caesar's attacks are not definite descriptions of epilepsy; they indicate nervous attacks and could have been manifestations of any one of several diseases, including severe malaria, which was the scourge of ancient Rome. Suetonius, however, is more definite in his writings; he speaks of distinct seizures. In "Julius Caesar," Shakespeare refers to attacks on three occasions: once when Caesar was swimming in the Tiber; once when he was in Spain on a military campaign, and once when he was offered the crown as emperor of Rome. On the last occasion it is said that he fell down in the market place, and foamed at the mouth, and was speechless. Some writers believe that Shakespeare developed his character in the interests of his play without regard to historical accuracy. Others agree that Caesar really had epilepsy and that he had his first series of attacks before he was 21.

Reliable medical records of Caesar's physique or illnesses are not available. General descrip-



*Washington's last illness was acute inflammatory edema of the larynx.*

tions of him are to the effect that he was tall, with a wide, high forehead, a large, thin nose, full lips and dark gray eyes. His complexion is said to have been pale, and he is thought to have had a tendency to weakness in youth, which he overcame to the extent that he made a record as an athlete and was able to withstand successfully the hardships of war better than many of his officers and soldiers who appeared more healthy. He was the outstanding man of ancient Rome, and is famed for his record as orator, statesman, politician, historian and conqueror. The busts and portraits that are available for judging him as to appearance suggest that he may have had some bony changes due to a pituitary disorder, and some writers have attempted, in part, to explain his personality and characteristics on this basis. Skeletal and sculptural variations, however, are too indefinite for it to be said that he had bony changes indicative of this or any other disorder.

Those who want to believe that he had epilepsy will probably not be far wrong. He is one of the world's famous characters who died a violent death, and so far as illness, accident and death are concerned, history is definite chiefly in stating that he was murdered in the chamber of the Roman Senate—because, as Brutus says, "he was ambitious."

### *Napoleon Bonaparte*

The Man of Destiny has been spoken of by H. G. Wells as a "dark little archaic personage, hard, compact, capable, unscrupulous, imitative and neatly vulgar." He was slightly less than 5 feet, 6 inches in height. Many books have been written about him, but the story of his life is still as intriguing as ever. New facts and conjectures are received and considered avidly. He suffered several wounds during his campaigns, but he made light of them—a fact that accounted in part for the belief of his soldiers that he was divine. He is said to have suffered from scabies (itch) and eczema, and probably from kidney disease and mild uremia occasionally. He was subject to periods of drowsiness and to stupor. The latter aided the story that he had epilepsy.

It is said that Napoleon first began to show the effect of a malady that injured his mental powers in the Russian campaign of 1812. He would plan a campaign with all his old time military genius, but when the fight was actually on his energy flagged and he became negligent and drowsy. His mental failure showed itself plainly at the Battle of Waterloo, and when it became necessary to hurry him from the field he was so sleepy that it was difficult to get him on his horse. Previous to this battle one of his generals had said: "He used to be lean, shy and silent. Now he is fat and talkative. He is sleepy and his mind wanders."

The story that he was an epileptic was published during the height of his power. His physicians and generals, however, did not lend any evidence to it. There is no written record that he was ever seen to have a convulsion, although he was seen in attacks of stupor. Epileptic stupor follows an epileptic convulsion and stupor not preceded by a convulsion is probably due to some disorder other than epilepsy. Thus there is no definite evidence that Napoleon had true epilepsy; the story may have been told for the effect that it would have on his leadership and power. Such stories have been told about many great leaders because they appeal to certain classes of people. They like to believe that national idols and heroes are subject to ailments and disorders that put them on a level with every one else.

Napoleon died from cancer of the stomach. Its presence was manifested by indigestion, pain and spells of vomiting for several years before his death. He believed that he had a cancer, and postmortem examination proved him to be

correct. The cancer was a large ulcerating growth on the upper side of the stomach which had perforated (eaten) into the abdominal cavity and become adherent to the liver and diaphragm. The lungs showed some evidence of tuberculosis, which was not active. It is interesting to note that, on postmortem examination, a layer of fat from 1 to 2 inches thick was found all over his body. It may have been an outcome of the sedentary existence of his last few years of life.

### *George Washington*

The last illness of Washington came on only about forty-eight hours before he died. At the time, his death was attributed to a cold, chill and fever. It has since, in various histories and other books and publications been attributed to diphtheria, quinsy (severe sore throat with the formation of an abscess), pneumonia, acute laryngitis (inflammation of the larynx or voice box between the throat and windpipe), and even cancer and tuberculosis.

In the light of present knowledge it is most probable that his last illness was acute inflammatory edema (inflammation and swelling) of the larynx. This diagnosis was arrived at by Dr. Walter A. Wells in an article in the *Virginia Medical Monthly,* January, 1927. Washington probably died from suffocation, as acute swelling of the larynx tends to close it and stop breathing by preventing air from either entering or leaving the lungs. It is possible, however, that death may have been due to the poison of the organism that caused the inflammation and swelling. This organism was probably the streptococcus, the organism that usually causes "blood poisoning."

Washington's previous illnesses included smallpox, dysentery, influenza, malaria and pneumonia. His life was despaired of several times—once while he was president, when he was laid up for six weeks with a carbuncle. His last illness was so short and apparently so unimportant that his death was a surprise and a great shock to the country at large. News traveled so slowly in those days that he died before it was known that he was ill, except in his immediate neighborhood and in the nearby towns, especially Alexandria, Va.

The weather was cold, with rain, hail and snow falling alternately, on Dec. 12, 1799, the day on which Washington contracted his last illness. He rode about his farm for several hours in the cold and wet, and when he came home there was snow on the back of his neck and he was chilled, but he ate dinner without changing his clothes. The next day he complained of a cold with sore throat and hoarseness, but refused to take anything for it as his policy was, "Never take anything for a cold. Let it go as it came." About 3 o'clock the next morning (Saturday) he told Mrs. Washington that he was very unwell and that he had a chill. At the time he could scarcely speak, and he breathed with difficulty. Later in the morning the family physician was sent for; he came, and immediately called two other physicians in consultation from Alexandria, Va. Washington was given all available treatment that was indicated at the time, but he continued to grow worse and died at about half-past eleven o'clock on Saturday night, Dec. 14, 1799.

A statement by his physicians, reviewing his illness, the treatment given, and his death, was published in the Alexandria (Va.) *Times* on December 19. This was the first general statement that was available; copies of it have since been used in many books and publications. It appears in Dr. Wells' paper referred to in this article. In this statement it is noted that Washington believed his illness would be fatal, and that "he economized his time in the arrangement of such few concerns as required his attention with the utmost serenity." His physicians were of the best available, and the treatment that he received was the standard of that day and time. Among his last statements were these, to his physicians: "I feel myself going; I thank you for your attention but I pray you to take no more trouble for me. Let me go quietly. I cannot last long."

# How UNDESIRABLE IMMIGRANTS

PART II

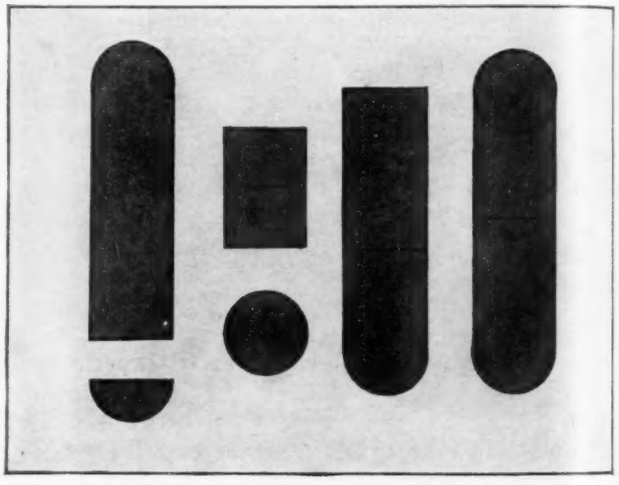
VARIOUS tests have been devised for ascertaining the mental activities of immigrants. Certain premises are stated and a false conclusion drawn, the immigrant being asked if the conclusion is correct. For instance, he is told that there appeared in the papers a news article stating that a young woman's body was found cut into eighteen pieces and that the police say she committed suicide. Does he think that this is likely?

The immigrant is told that he should imagine himself shipwrecked and alone in a small boat many hundred miles from shore. He has with him in the boat two boxes, one containing 50 pounds of bread, the other containing 50 pounds of gold. The sea is rough and it is necessary to throw one of the boxes overboard to keep the boat from sinking. Which would he throw overboard?

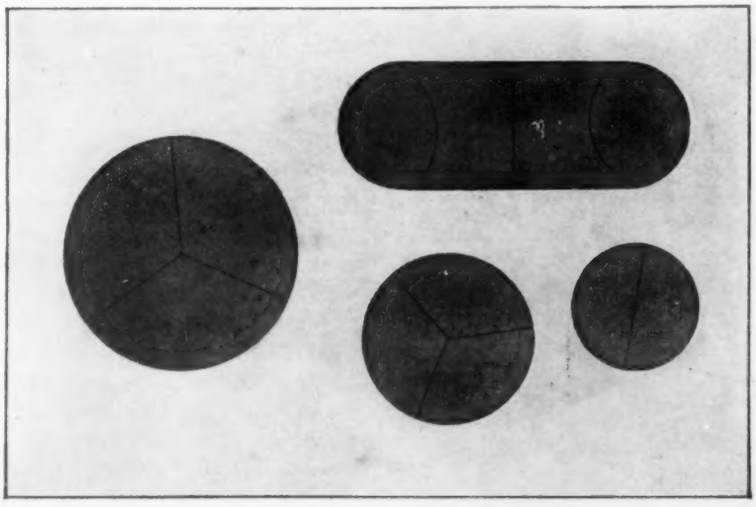
In another test the person examined is told to imagine himself and a companion shipwrecked in a small boat and floating at sea. They have with them two pails of fresh water. Several days later they have consumed all the water in one pail and it is empty. The other pail is still full of fresh water, their only supply. Then the person being examined is told that he suddenly discovers his companion's clothes are afire. What would he do?

A rather dull appearing Irishman once answered that he would grab the bucket of fresh water and pour it over his companion. Upon being asked what he would then have to drink when he became thirsty, he said, "Begorra, I never thought of that. I guess I'd pray to the Virgin for rain." Obviously he was not feebleminded, perhaps just true to character.

Feebleminded persons often fail completely to comprehend situations of the kind just pictured. To the story of the woman's body being found cut into eighteen pieces, they give such answers as, "I don't know," or, "Indeed, I am not there," or, "It was a great sin for her to kill herself." To the question of the boxes of gold and bread they often answer, "I am not hungry," or, "I don't like bread," or, "I don't know," or, "It's nice to have money."



*Some of the performance tests are simple and some are more difficult; the alien is rated by the manner in which he solves them, the length of time it requires for him to solve them, and the amount of attention and concentration he uses.*



*One of the performance tests given immigrants suspected of feeblemindedness.*

Immigrants suspected of feeblemindedness are also asked to count forward to 20 and backward from 20. They are asked to repeat digits, in the order given by the examiner. The average normal illiterate above 9 years of age should repeat six digits, and those who fail to repeat four digits are probably defective. Any Anglo-Saxon above 12 years of age, who has had any educational opportunities and retains only six digits, should be suspected of being defective. This is a fair standard because

# Are Discovered — By Louis Schwartz

many American children and children of French or English parentage who have had such schooling can repeat ten or more.

The cube test is a good test. A number of cubes (four or five) are placed in front of the person to be examined and are touched in a certain order by the physician. The person is then asked to touch them in the same order. This tests the power of attention and memory. No feebleminded person does well with five cubes, although some after a few days' practice do four.

Performance tests are also given the immigrants suspected of feeblemindedness. These consist of a frame with empty spaces in which blocks of corresponding shape and size fit. Some of these tests are simple and some are more difficult and the alien is rated not only by the manner in which he solves these tests, but also by the manner in which he goes about it, and the length of time he requires and the amount of attention and concentration he uses. For instance, a feebleminded alien may persistently try to fit a square piece into a round hole, whereas a normal person will see that it doesn't fit and will not make the attempt.

Some simple pictures are also shown to the person to be tested and he is asked to describe what the picture represents. The picture is such that any one of normal mentality can easily describe its meaning. For example, there is a picture of a young man leaving a room in which a young woman is sitting on a chair with her head in her hands. The picture shows that both the young man and the young woman are sad. The feebleminded often fail to describe the meaning of the picture. They will not even venture to give a meaning unless particular questions are asked.

When asked, "What is the man doing?" some say, "He is coming into the room." When asked, "What is the lady doing?" they answer, "She is sitting down." When asked, "Why has she her head in her hands?" they reply, "I don't know." When asked, "Is she glad or sad?" they say, "I don't know."

The picture is taken away and questions concerning it are asked. How many chairs were there? Were there any pictures on the wall? Were there any carpets on the floor or any clocks? The normal immigrant should be able to give a fair description of the room after

*A person of normal mentality can easily read a meaning into this picture. The feebleminded usually fail to find any significance in it.*

studying the picture, whereas feebleminded ones will note few objects in the room.

These tests may appear to be arbitrary, but it must be remembered that the decision is not based on them alone. The trained medical examiner never allows these tests to become mere mechanical processes, for the performance of which the alien receives a certain mark. The examiner realizes the responsibility of placing on any one the stigma of mental deficiency, and a person is certified as feebleminded only because his general knowledge, retentiveness of memory, reasoning power and capacity of learning are judged to be below normal for his race and environment. Moreover, these findings must be concurred in by two medical officers, both of whom have thoroughly examined the alien in question.

### *Insane Are More Difficult to Detect*

The detection of the insane immigrant is a more difficult matter than the detection of the feebleminded one. All aliens, who, by their manner, appearance, expression or reaction to the formalities of the immigration examination, lead either the medical examiner or the immigrant inspector to suspect that they are mentally abnormal are closely examined as to their previous mental and physical disorders and as to their present mental condition. They are asked questions tending to bring out any hallucinations or delusions of sight, taste or smell, persecution, grandeur or riches that they may have.

A record is made of the questions and answers, and the examination may be continued on other days until the examiner is satisfied that he has properly gaged the alien's mental condition. Often, on the first examination no delusions or hallucinations are brought out. Many instances have occurred in which the examiner had just about made up his mind that the alien was apparently sane when suddenly in answer to a question a whole series of hallucinations or delusions were uncovered. Sometimes the man tells a story that sounds reasonable in itself and is absurd only when his social condition and circumstances are considered.

One alien told during the examination that he wanted to enter the United States in order to raise $100,000 from a friend to invest in sheep farming in the Aleutian Islands. He said there was plenty of fine sheep country to be had cheaply there and he knew this from having been up there many years ago; that he was, until recently, a shepherd in Western Canada and knew all about sheep raising and was sure to make a great deal of money in a few years.

On questioning, it developed that he did not know where in the United States his friend lived, and that he had not seen him for many years; nor had he corresponded with him. He was not certain that his friend had $100,000, or if he did have it that he would invest it. He did not have a clear idea of the location of the island in the Aleutian group or of who owned the land he wanted to buy, or of how much it would cost to buy it. He had no clear idea where he was to get the sheep and he had not considered how he would feed them during the long winter months. Although he was nearly 70 years old and appeared far from robust he thought himself well able to stand the arduous and rigorous climate of the Aleutian Islands. He was dressed in rags, looked like a vagrant and had only a few small coins in his clothes, although he said he had $400 in a bank somewhere in the United States. Physical examination showed signs of paresis, or softening of the brain, and a certificate was issued that he was insane. Later it was found that he was a patient in a psychiatric clinic.

I well remember the case of another alien who was coming from England to the United States to be the superintendent of a knitting mill. He landed in New York and, traveling in the steerage, was taken to Ellis Island for examination. Some peculiarity in his manner was observed by the medical officer and this led to his detention at Ellis Island for observation as to his mental condition. He appeared to be a high grade man and explained the fact that he was traveling in the steerage by saying that the cabin accommodations were all taken and he had to get to the United States before a certain date. This was found to be true.

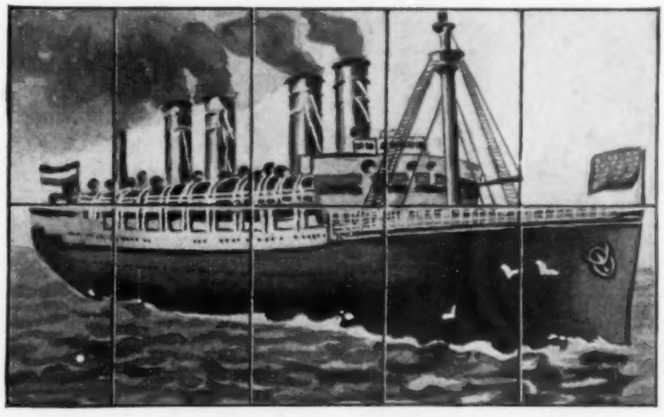
### *A Religious Paranoiac*

The man's behavior was good while under detention and he gave no trouble. During this time it was frequently noticed that he went off into a corner and seemed to be muttering to himself. When questioned concerning this he stated that he was talking to God, and on following up this line of examination it developed that he thought he was specially appointed by God to bring back the people to the original religion of Christ from which they had strayed, and that he was going to begin in America, where the people had strayed farthest from his teachings. He stated that he had many conversations with God under whose direction he acted and God told him that he was picked out for this duty because he had always led a perfect life.

Other grave symptoms of insanity developed, soon showing the man to be a religious paranoiac. In this form of insanity the patient may apparently go about his business in the normal manner for some time and suddenly, overcome by his delusions, may commit a serious crime. Needless to say, he was deported.

Formerly, these examinations were all given in the United States at the port of entry. At

Ellis Island the immigrants were marched along in line in single file about 15 feet apart. One medical examiner stood at the beginning of the line and observed the patient's gait, his general appearance and physique and spoke a few words to him, and another doctor at the end of the line examined the eyes for trachoma. The first doctor noted whether the alien was out of breath, abnormally pale or flushed, signs suggestive of heart or lung disease, whether he had any abnormality of gait, suggestive of deformity of the limbs or of disease of the nervous system. He also looked for various certifiable diseases. He noted whether the alien was strong and vigorous or feeble and relaxed, and any one he suspected of having a physical or mental defect was turned into a room by an attendant for an intensive medical examination. The doctors doing this work became unusually observant and expert in making "snap" diagnoses, and the number of defects found in immigrants was usually high, considering the rapidity of this method of inspection.



*A steamship picture form board used in making mental tests of immigrants.*

The aliens finally found inadmissible were deported, and if the medical examiner certified that the defect was such that it could have been detected by competent medical examination at the port of embarkation, the steamship company was fined for bringing over the alien and compelled to return him to his native land without cost to the United States or to the immigrant. Because of the great hardship inflicted on the immigrant by being deported after breaking up all home ties and because of the expense to the steamship company, the present method of medical inspection at the principal European ports of embarkation was instituted.

Now that the Public Health Service has medical examiners abroad there are comparatively few deportations, and most of those who are deported after arrival are persons who have misrepresented their cases to the United States authorities at the port of embarkation.

One hears many stories of the injustice and roughness of the United States officials to immigrants. In my fifteen years of immigration duty I have seen only a few cases of officiousness by federal authorities and those were only in subordinates, never among those in charge, and in the end the alien never suffered as a result. I have seen many acts of kindness and charity done by the federal officials, who have gone far out of their way to make it easy for some poor immigrant. I know of many letters of thanks received for unusual kindness and consideration shown to immigrants. I have never known of any one being refused entry who was entitled to enter. Rather have I known of persons whom the law debarred but who were finally admitted.

I remember one case of an Italian family, recently arrived in the United States, which was compelled to leave behind in Italy one idiot child. They sent for this idiot child and when it landed in Philadelphia it was certified by the medical officers as being an idiot and there was no other course for the immigration authorities than to deport this child. The parents employed a lawyer who obtained a writ of habeas corpus and prevented the immediate deportation of the child and brought the case before a federal court.

The mother and the child were in the court room, the child, aged 10, presenting all the stigmas of degeneracy, was sitting in the lap of the mother directly in front of the judge. The lawyer admitted that the child was an idiot but stated that there was no one in Italy to take care of him; that it was breaking the mother's heart not to be near him; that the family was willing to place the child in an asylum at its own expense in the United States, and was willing to put up a bond that he would never become a public charge. The lawyer stated that there was no danger of this child ever doing any harm or propagating its kind in the United States; that it would be an act of inhumanity to separate this child from its mother, and he pleaded with the judge to permit the child to be admitted under bond. The court assented.

When we consider the great number of charity patients in our clinics, hospitals and insane asylums; the many foreign-born criminals in our jails, and what a tax they are on the resources of this country; the danger of their defective strain mixing freely into our population, then it can only be said that, if anything, our present immigration laws are not strict enough and are not always enforced with sufficient rigidity. For though, as they stand, our immigration laws do probably work some regrettable and unavoidable hardships, they undoubtedly make for the greatest good of the greatest number in our country.

# A New Foster-Mother

By James A. Tobey

*The bottling and pasteurizing room in the Mothers' Milk Bureau of Detroit.*

A NEW and better foster-mother has supplanted the perennial wetnurse, that necessary but often slatternly female who had to be summoned when nature failed the nursing mother. This superior maternal accessory is bottled breast milk, one of the most unique and valuable of modern commodities. The availability of this precious fluid has resulted in the saving of numerous infant lives and it has promoted the health and physical welfare of many others. The recent development of methods for the procuring, keeping and using of human milk is, in fact, one of the notable contributions to modern child hygiene.

### *Twenty Cities Sell Bottled Breast Milk*

Breast milk in bottles is now a reality in at least twenty American cities, from Boston to Los Angeles. It is not sold commercially by milk companies, but is usually collected and marketed by child welfare agencies and hospitals. These institutions buy the milk from healthy nursing mothers and then sell it, either as "certified" or "grade A pasteurized," at cost, below cost or at no cost to worthy mothers who are in urgent need of it or whose physicians have prescribed this essential food for the babies.

Compared with the traffic in cow's milk in the United States, which amounts to more than 50 billion quarts annually, the production of mother's milk for distribution in bottles is not vast. The quantity of breast milk used in this way varies from about 500 to 5,000 or more quarts in each of the different cities. Probably a total of 50,000 quarts during 1928 is a fair estimate. To be sure, this is not a tremendous quantity, but it represents an increase of approximately 100 per cent over the previous year. This legitimate trade in breast milk has been growing at a rapid rate in late years and will unquestionably continue to do so, because of the many advantages of the product.

Twenty years ago bottled breast milk was virtually unknown, though some progressive physicians and nurses may have been thinking about it. A health officer in Brookline, Mass., Dr. F. P. Denny, had been sending a trained nurse into the homes of a few nursing mothers as early as 1907 or 1908, but the first really extensive use of mother's milk as therapeutic merchandise did not commence until some two or three years later.

### *Boston Had First Human Milk Bureau*

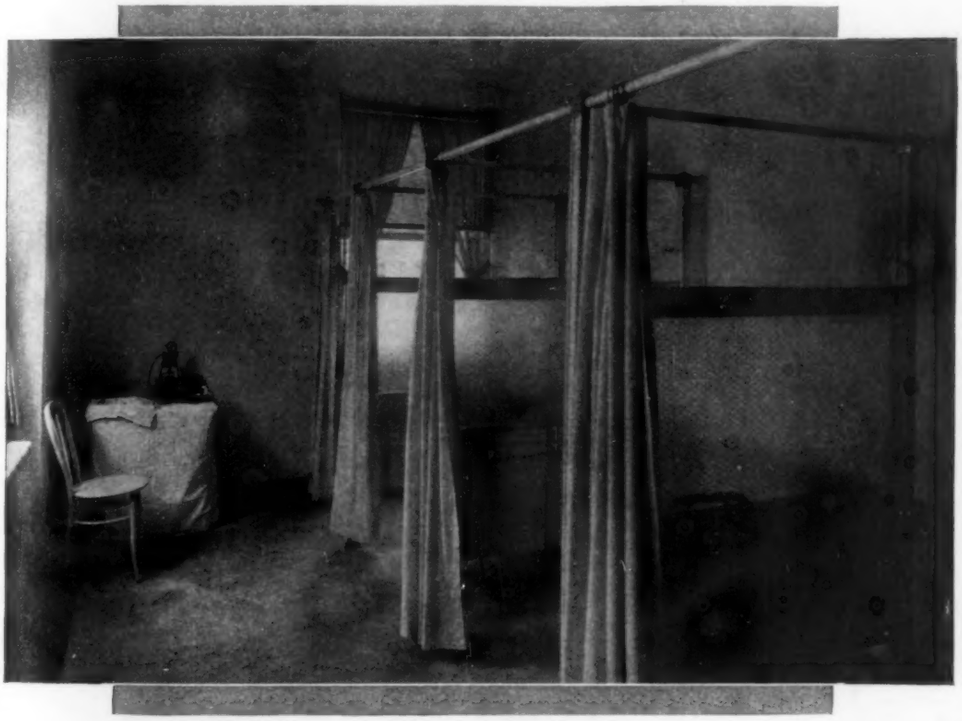
In 1910, a premature baby was born in Boston. For some reason it could not be nursed by its own mother and the doctor sent in an urgent call for a wetnurse. More than twenty-four hours elapsed before a suitable wetnurse could be found and then it was too late. The baby had died. The death of a baby is always a tragic event but it is especially so when it is preventable. A group of Boston doctors decided that such an unfortunate episode should not occur again. Today it could not happen and does not.

Two Boston institutions, the Massachusetts Babies Hospital and the Boston Floating Hospital, almost simultaneously set up human milk bureaus in 1910. The former established a directory for wetnurses and acquired a house at which from five to eight unmarried mothers lived. Milk from these nursing mothers could

be secured at any time, either by sending out the mother herself or by collecting her milk in a bottle and sending it to the patient. This system was always expensive but was continued until 1927. During that year and since, maternal milk has been collected from healthy married mothers in their own homes. In 1927, a total of 174,466 ounces, or about 5,452 quarts, were collected by this one organization.

### *Special Drying Machine Invented*

The Boston Floating Hospital went one step further, for not only did its workers collect human milk, but they devised the first successful plan for keeping it. As early as 1909 attempts had been made to preserve human milk by means of chemicals, but the milk so treated was found to keep no more than thirty days. Since cow's milk had been successfully dried and was being sold commercially in powdered form, the doctors of the Floating Hospital decided to try this method for breast milk. With the aid of several professors and two students of the mechanical engineering department of the Massachusetts Institute of Technology, a practical drying machine was constructed in 1920. The students used it as the basis of a thesis and thus not only acquired their degrees but made a distinct contribution to child welfare.



*Each mother who furnishes milk has a separate cubicle. The breast milk is expressed usually by hand, although an electric pump is used when necessary. This scene is from the Mothers' Milk Bureau of Detroit.*

Human milk is dried in the same way as is cow's milk, except, of course, on a much smaller scale. A machine for making ordinary powdered cow's milk, such as is used by the manufacturers of this product, costs thousands of dollars and handles thousands of pounds of dried milk a day. The only element removed from the milk in the process is the water, which normally constitutes about 87 per cent of fluid milk. The little breast milk drying machine in Boston consisted of a heated steel drum upon which the milk was poured as the drum revolved. The heat evaporated the moisture and the resulting powder was collected and bottled for immediate or future use.

Like any milk powder, this dried breast milk has excellent keeping qualities and may be stored under proper conditions for as long as five years. The process apparently does not affect the nutritive value of the milk, though some protein is generally added to it when used, and one of the vitamins, the antiscorbutic, or vitamin C, must be increased in the diet by the addition of orange juice or tomato juice, since this vitamin is reduced somewhat when foods are heated.

Heating makes milk more digestible, for it is a well known fact that rapid heating of any kind of milk reduces the size of the curd, and, as in the case of condensed milk, makes it more easily digested than raw milk or even pasteurized whole milk. Physicians of the Floating Hospital found that premature babies and others in need of special feeding measures thrived on this dried human milk, and in reporting their results in a number of cases, they say, with professional reserve, that "These cases seem to represent a step forward in infant feeding."

### *Profitable Business for Mothers*

Supplying the market with human milk is a profitable business for many mothers. One woman in New York City earned $1,700 in four years as a human dairy farm, with a production of 400 quarts during the entire period. Another young mother received almost a thousand dollars for a year's lactation, producing extra milk

while nursing her own baby. It is amazing how much milk can be furnished by one woman, especially if she is taught the proper methods. She may easily increase the supply from 2 or 3 ounces a day to from 15 to 20 ounces or more, in addition to a satisfactory supply for her own baby. The price paid by the child welfare organizations ranges from 10 to 15 cents an ounce. In New York the system has been to pay 10 cents an ounce for the first 5 ounces and 15 cents an ounce if more is forthcoming. In Detroit the rate is 12 cents an ounce and carfare for mothers who come to the office of the Mothers' Milk Bureau in order to lactate there under supervision, but only 10 cents an ounce to a selected few who are permitted to collect their milk at home.

### *Selling Price Varies*

The selling price of bottled breast milk varies from 14 to 30 cents an ounce, though of course a considerable amount is given away or at least sold at a bargain to needy cases. The cost of collecting, preserving and distributing the milk is about 17 cents an ounce in Detroit and 18 cents an ounce in New York City. In the latter city there are three mother's milk stations under the auspices of the Children's Welfare Federation. This whole system of marketing human milk has important economic and sociologic as well as medical aspects, for it aids in the relief of poverty and permits young mothers to stay at home instead of going out to work.

Just as the production of cow's milk must be surrounded with many sanitary safeguards to ensure a clean and pure milk supply, so must the production of breast milk be conducted in a hygienic manner. Although human milk is the ideal food for infants, its quality varies somewhat, and its nutritive value is affected by the diet and personal hygiene of the mother. Healthy mothers, free from disease, must therefore be chosen as producers of such milk for distribution.

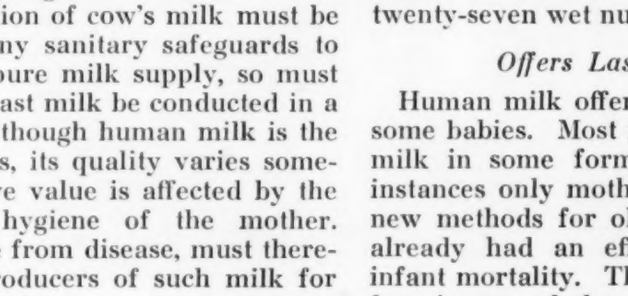
The process of pasteurization—that is, heating of the fluid milk—is an added precaution. Bacterial analyses are made on this human milk, as they are on cow's milk, and pasteurized breast milk seldom shows more than 3,000 bacteria per cubic centimeter. The requirements for Grade A pasteurized cow's milk is usually that it shall not exceed 50,000 bacteria, while "certified" milk is restricted to not more than 10,000. There is no danger of transmitting a disease from a mother to a baby who uses the breast milk, as mother's milk is not a vehicle of infection, unless subject to outside contamination, but it is desirable that it be clean and pure milk.

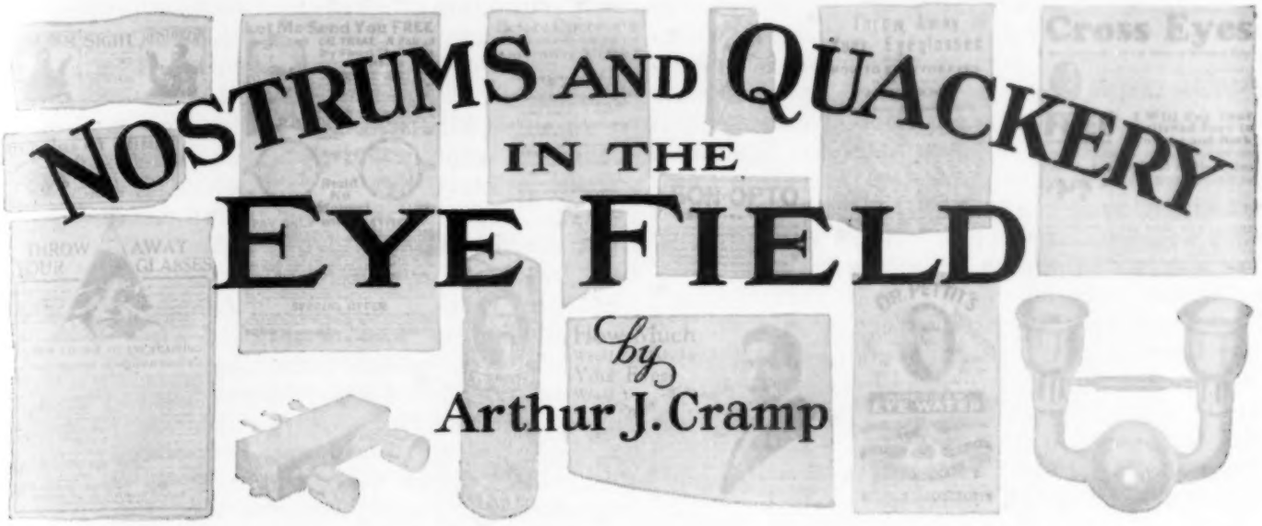
Human milk usually is collected at a mother's milk unit under the supervision of a trained matron. The mothers must be cleanly in person, must wash their hands, have the nipples washed by the matrons, and observe other rules of personal cleanliness. The milk is collected in sterile glass containers and all of it is mixed in sterile gallon bottles. It may then be pasteurized, after which it is kept in the refrigerator until delivered in sterile bottles to fill the orders from the consumers.

During one year in New York City there was collected 2,533 quarts of breast milk from 116 mothers. This milk was given to more than 400 babies, with the result that about 72 per cent were improved in health and only 2.6 per cent were unimproved. Twelve per cent died, though in a considerable proportion of these cases the milk was ordered for only one day, perhaps as a last resort, or possibly it was not used at all. In Detroit in one year 323 babies were fed on milk supplied by only sixteen mothers. In 1917 the Detroit Bureau placed twenty-seven wet nurses; in 1927 it placed none.

### *Offers Last Chance of Life*

Human milk offers the last chance of life to some babies. Most infants can be fed on cow's milk in some form, but in a few desperate instances only mother's milk will suffice. The new methods for obtaining and using it have already had an effect in helping to reduce infant mortality. The promotion of infant welfare is one of the most important aspects of modern public health. As Phillips Brooks so well said, "He who helps a child helps humanity with a distinctness, with an immediateness, which no other help given to human creatures in any stage of their human life can give."






# NOSTRUMS AND QUACKERY IN THE EYE FIELD

by

**Arthur J. Cramp**

THE specialist is civilization's reaction to its own complexity. The man-of-all-work gives way to the carpenter, the plumber, the electrician. In medicine, the specialist was born when medical knowledge became too voluminous for one man to master all its ramifications.

The quack and the faddist are to be found not only in the general medical field, but also in its specialties, for every art and science has its parasites—hangers-on that live by their wits, capitalizing the public's ignorance of technical subjects. Fortunately for biologic perpetuity, the human machine is a marvel of adaptability. If it were not, quackery would have died a-borning, for ignorant tinkering with a machine that had no powers of self-repair would inevitably result in the elimination of the machine, and even the most credulous would have learned to avoid the quack. It is because the sick frequently get well in spite of treatment, instead of because of it, that the ever hopeful and ever trusting believer in the verity of the printed word still flocks to the ignoramus or the quack who has a plausible message.

Considering the infinite delicacy of that mechanism of nerve and muscle that we call the eye, one might suppose that even the most careless would hesitate to subject this organ to the ministrations of nostrum venders, quacks and faddists. Yet the man who considers the best watch repairer in his town as none too skilful when his $50 watch gets out of order goes blithely to the drug counter or to the mail-order quack when his irreplaceable eyes begin to give him trouble.

The number of fads and faddists, fakes and fakers, nostrums and quacks in the eye field is large. There are mechanical devices for curing eyes, mail-order spectacle-fitting concerns, innumerable "eye drops" that may do little harm except to delay proper treatment, and, last but not least, practitioners who range from enthusiasts with a fad to swindlers with a scheme. What follows is a brief exposition, in paragraph form, dealing with a few of the nostrums, quacks and faddists in the eye field:

*Actina.*—This was a metal cylinder with a large opening at one end and a small opening at the other. It held absorbent material that was soaked in a mixture of oil of mustard, oil of sassafras, amyl nitrite and hydrobromic ether. The thing had the odor of an onion in an advanced stage of decomposition. It brought in a fortune to its exploiters and would doubtless still be on the market had not the federal authorities declared it a fraud and debarred it from the United States mails.

*Barrett Institute.*—This concern was run by Wesley M. Barrett, an osteopath, who in the past has dabbled in the Abrams quackery. Barrett has drummed up trade by means of display advertisements and has also conducted in certain papers a pseudo-health column, dealing with the care of the eye, ear, nose and throat. The Barrett concern declared that errors of refraction are due to vaccination, tobacco, coffee and tea; it sold a device called the "Barrett Eye Normalizer." This was a metallic affair, having two eye cups lined with rubber. By manipulating a small lever, these cups could be made to give a one-quarter rotation in either direction. In use, the "Normalizer" was placed over the closed eyes and the lever manipulated, the idea being that the eyeball could be made to rotate in accordance with the movements of the device. Actual tests with this silly piece of hokum proved conclusively that the device was incapable of moving the eyeball. Today the "Normalizer" is being sold by the "Natural Eyesight Institute, Inc.," which is said to be conducted—at least nominally—by a brother of Barrett, a lawyer.

*W. H. Bates.*—Dr. Bates (who also uses the trade style "Central Fixation Publishing Company") has urged people with errors of refraction to throw away their glasses and purchase his book (price $5) entitled, "Perfect Sight Without Glasses." The public has been told that this book "demonstrates that all persons wearing glasses are curable without them." The sum and substance of the Bates theory seems to be that any person suffering from errors of refraction may train his eyes to perfect vision by performing certain ocular exercises and exposing his eye to intense light. This hypothesis is not only unsupported by, but is definitely opposed to, the accumulated evidence of the science of ophthalmology. In May, 1929, the Federal Trade Commission issued a complaint against Bates, charging, in effect, that the claims used by him in selling his book, "Perfect Sight Without Glasses," are false and misleading and "to the prejudice of the public."

*Bon Opto.*—This was sold under the claim that it would make weak eyes strong, that it could make it possible for a man almost blind to read everything, and that it has permitted a woman to whom for several years the trees across the street had been a dim green blur to be able to count the fluttering leaves! When analyzed, "Bon Opto" was found to consist mainly of common salt and boric acid, with a small amount of zinc sulphate and a still smaller amount of menthol.

*F. O. Carter.*—This man was one of the most notorious quacks in the eye field. For years he advertised widely and, until comparatively recently, plied his disreputable trade unmolested. Carter "specialized" in the alleged straightening of cross-eyes. Most of his work was done in Chicago, although he occasionally made trips to other cities. His victims, however, came from a large area, for he advertised extensively in newspapers through the Middle West. How many eyes Carter has ruined will never be known. There have been a few cases in which the victims who lost their eyes as a result of Carter's butchery brought suits against him and were awarded damages by the courts. But they were unable to collect, as Carter went into bankruptcy. In June, 1926, Carter's Illinois state license was revoked.

*W. E. Coffee.*—This man is the son of a person who, until his death in 1927, was a particularly blatant mail-order quack in the deafness field. W. E. Coffee has conducted a mail-order spectacle-fitting business from Rock Island, Ill., and Sabot, Va. If blood counts for anything, he should be a successful quack.

*Dermacilia Eye Remedy.*—When this preparation was analyzed by the federal chemists some years ago, they reported that it contained boric acid with small amounts of zinc sulphate and aluminum sulphate and with indications of hydrastis (golden seal). In 1920 the product was declared misbranded because of false and fraudulent claims made for it.

*Eyelin.*—This was sold under the claim that it would repair and rejuvenate the eye and sight. When the government chemists analyzed it, they reported that it consisted essentially of perfumed vaseline. It was declared misbranded.

*Ideal Sight Restorer.*—This device consisted of two eye cups of rubber, connected with a metal tube and having attached a rubber bulb containing a valve. Releasing the bulb after pressure produced a partial vacuum in the tube that connected the two eye cups. In use, these eye cups were placed over the closed eyelids and the rubber bulb compressed, and then released. The advertisements declared that the device would make eyesight perfect, no matter how long glasses had been necessary or how defective the vision. One Charles A. Tyrrell was the president of the concern that put out the "Ideal Sight Restorer," but of late years Tyrrell seems to have ceased pushing his eye device and has devoted his energies to the exploitation of a glorified rectal enema.

*P. Chester Madison.*—This man called himself "America's leading oculist," who used an "Absorption Method." Madison issued a somewhat elaborate booklet as part of his "come-on" literature. In it he reproduced cuts from an authoritative work by Haab of Berlin. A picture that in Haab's book was described as the case of a wound of the eye from a splinter of iron was reproduced in Madison's advertising and labeled as a case of inflammation, adhesion and bursting of the eyeball that was cured by the Madison "Absorption Method." Another picture from Haab's book was reproduced and described as a cure of secondary cataract and adhesions following operation. In the original, it was described by Haab as another case of a wound of the eye due to a piece of iron.

*Magic Eye Salve.*—This preparation was analyzed by the federal chemists in 1917 and reported to consist essentially of zinc oxide, benzoic acid and petrolatum. As it was labeled at that time as a cure for all diseases of the eye, the stuff was declared misbranded because of the false and fraudulent claims.

*Murine.*—When this preparation was examined in the chemical laboratory of the American Medical Association nearly twenty years ago, the chemists reported that the preparation was essentially a solution of borax in water, with a trace of some golden seal preparation, probably berberine. For some years the Murine Company has printed a list of what purport to be the ingredients used in compounding the preparation—without quantities. For a while—beginning about 1923—one of the alleged ingredients

of Murine was chloramine-T. Tests made in the chemical laboratory of the American Medical Association, sensitive enough to disclose the presence of one part of chloramine-T in 50,000 parts of Murine, failed to show the presence of any chloramine-T. As chloramine-T is incompatible with boric acid—an ingredient of Murine that is present—the results of the analysis were not surprising. The present Murine advertising makes no claims for chloramine-T as an ingredient.

*Okola Laboratory.*—This was a mail-order fraud conducted from Rochester, N. Y. The scheme of this concern was to advertise that an eminent medical man, Dr. John L. Corish, had discovered a marvelous treatment for affections of the eyes, by which those who were wearing glasses could do without them. It was claimed that the treatment originated in Germany and would cure eyestrain, cataract, disease of the optic nerve and many other serious conditions. The facts were that John L. Corish was not an eminent medical man but a crude quack who had been connected with other mail-order nostrums; the treatment originated not in Germany but in Detroit, Mich., and consisted of some tablets composed of baking soda and boric acid. After this fraud had swindled the public out of $200,000, the federal authorities got around to it and debarred it from the use of the United States mails.

*Optona.*—This has been analyzed at various times and the analyses show that it contains borax and a small amount of baking soda.

*Pettit's American Eye Water.*—Many years ago this preparation was reported to contain acetanilid, morphine, boric acid and aluminum sulphate. The manufacturers, however, in 1913 or 1914, eliminated both acetanilid and morphine. Tests made in the chemical laboratory of the American Medical Association in September, 1929, failed to show any aluminum salts; there was found, however, glycerin and boric acid.

*Penslar Eyetone.*—This preparation was analyzed some years ago and reported to contain boric acid, zinc sulphate and salicylic acid. The latter ingredient was apparently added as a preservative. The label on a bottle of "Penslar Eyetone" purchased in August, 1929, declared its active ingredients to be boric acid and zinc sulphate. As the preparation also had the odor of camphor, it seems likely that this substance has supplanted the salicylic acid as the preserving agent.

*Ritholz Quackery.*—This Chicago concern, conducted under various names, sold spectacles on the mail-order plan. In their pretense of fitting glasses, the information that these quacks asked for was: (1) How old are you? (2) How many years have you used glasses, if any? A number of test cases were carried out and in not a single instance were the glasses that were sent by the Ritholz concern found to be suitable. The Ritholz quackery was dealt with in detail in an article, "Tinkering with the Eyes," that appeared in HYGEIA, August, 1925.

*Succus Cineraria Maritima.*—This nostrum is not marketed as an ordinary "patent medicine" but is sold as a product for physicians to prescribe, and, unfortunately, there are some physicians who prescribe it. For years it has been advertised as a preparation that, when dropped into the eye, will remove cataract and other opacities of the eye. The government chemists reported that the preparation was essentially a solution of glycerin and boric acid in water, with some vegetable drug extractives. Government officials charged that the claim that Succus Cineraria Maritima was a "cure" for cataract and other opacities of the eye was false and fraudulent. Did the company justify its claims? No, it pleaded guilty and was fined!

*Thompson's Eye Water.*—This product, which has been on the market many years, was analyzed some years ago and the chemists reported the presence of boric acid, zinc sulphate and opium in alcohol and water. Specimens purchased in August, 1929, declare—as the National Food and Drugs Act requires—the presence of alcohol, 10 per cent, and opium, 1½ grains.

# SIMPLE LESSONS *in* *Human Anatomy*

*By B. C. H. Harvey*

Lesson IX

THE ALIMENTARY CANAL, THE PHARYNX AND THE GILL ARCHES

FROM the mouth the food passes through the middle pharynx, the lower pharynx and the esophagus (fig. 69 in the October number). The esophagus carries the food through the neck and thorax and delivers it to the stomach, the sacklike enlargement of the alimentary tube in which digestion takes place. Between the mouth and stomach the tube serves for transportation only. Its expanded upper part, the pharynx, transports both food and air. The parts that carry air have grown off from the pharynx as outgrowths. They are the nose cavity connected with the upper (nasal) pharynx, and the larynx, trachea and lungs connected with the third or lowest part of the pharynx (fig. 71 in the October number). These will be described later in connection with the respiratory apparatus.

The mucous membrane of the food-carrying part is a tube 16 inches in length from teeth to stomach. It is wider in the pharynx, narrower in the esophagus; the latter has a diameter of ⅗ of an inch. Its structure is modified in accordance with the rough nature of much of the food, which is not yet digested into fluid and sometimes not even chewed. It must be tough and strong, extensible and adjustable, for splinters of bone or other rough objects are likely to pull parts of it out of place. Accordingly, the mucous membrane down as far as the stomach is like that of the mouth; it is a tough pavement of from twelve to fifteen layers of cells (fig. 84). It sprouts off many small glands which lie just outside it; it has papillae in it, and it is underlaid and invaded in many places by masses of lymph cells like those in the lenticular papillae of the tongue (fig. 78).

The passage from the mouth into the middle pharynx is narrowed to form the throat or fauces (fig. 72). The roof of the throat is the soft palate and the floor is the base of the tongue. The sides have a wonderful and useful mechanism which exists only in the narrow throats of man and the mammals. Each side has two vertical folds, one in front of the tonsil and one behind it. These folds are really movable muscular curtains, and when we wish we can draw the curtains till they meet in the center. Then we draw down the valvelike soft palate so that it lies against them and closes up any chink that might be left between them. This closes the throat completely. Not even air can get through. This explains why the soft palate has the little tag which may be seen in the picture hanging down from the middle of it; the tag helps to close the chink. When throat and lips are both closed, we can draw down our huge tongues and so produce suction in the mouth cavity. Only mammals have great piston-like tongues. Only mammals can close their throats. Birds, reptiles and fish cannot, so these animals cannot suck.

On the sides of the throat are the tonsils (fig. 82). These are large masses made up of lymph cells underlying and invading the mucous membrane. It will be noted that there are in the tonsils deep pits with branching galleries where the mucous membrane dips in (fig. 83) and comes into the closest association with the lymph cells. These deep galleries are warm and moist; bacteria find them good nests in which to live and multiply. When the tonsils are thus infected they become diseased; the mucous membrane becomes disintegrated deep down in the crypts, and the bacteria and poisons they produce get through holes in it into the tissue fluids and thence may be carried throughout the body. That is how tonsils often become the portal of entry into the body for disease germs, and that is why they so often require removal before an infection can be eradicated.

High up on the posterior wall of the pharynx is another area in which the mucous membrane is infiltrated with lymph cells. This is called the pharyngeal tonsil. It is well developed between the ages of 2 and 12 ( fig. 82). When infected, it becomes greatly enlarged and projects in lumpy masses into the upper pharynx. These lumps are called adenoids. They interfere with breathing through the upper pharynx and the nose. Children so afflicted breathe through their mouths, unless the adenoids are removed.

*Fig. 81.—Esophagus, partly covered by trachea and blood vessels. (From Spalteholz, Human Anatomy, Herzil.)*

*Fig. 83.—Section through human tonsil, magnified 4½ diameters, showing the deep crypts with branching galleries. The mucous membrane is black and the lymphoid tissue dark gray. (From Braus, Anatomie des Menschen, Springer.)*

*Fig. 84.—Section across the human esophagus. At the left is a small piece magnified 13 diameters. At the right, magnified 4 diameters, is a small fold cut across, revealing mucous membrane on the surface in many layers; near the center, the muscle of the mucous membrane; at the base on the left, a small lymphoid nodule, and on the right a gland with its duct. Farther out is the circular layer of gut muscle and then the longitudinal layer. (From Braus, Anatomie des Menschen, Springer.)*

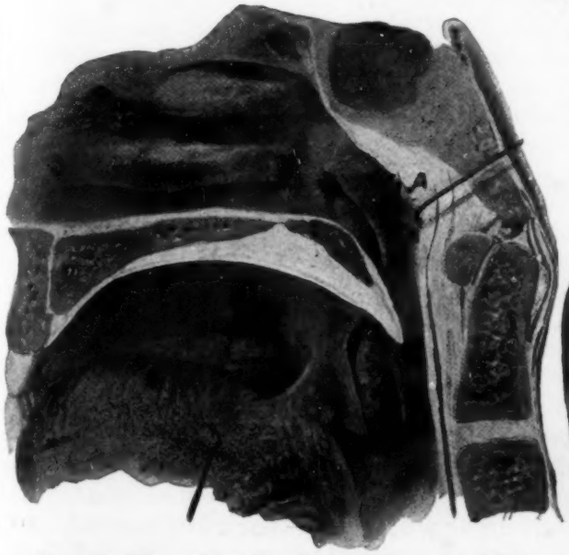


*Fig. 82.—The right half of the upper and middle parts of the pharynx. The soft palate separates them partially. Above it is the opening of the eustachian tube leading to the ear; below it is the tonsil. At the upper part of the posterior wall of the pharynx is the pharyngeal tonsil. (From Spalteholz, Human Anatomy, Herzil.)*

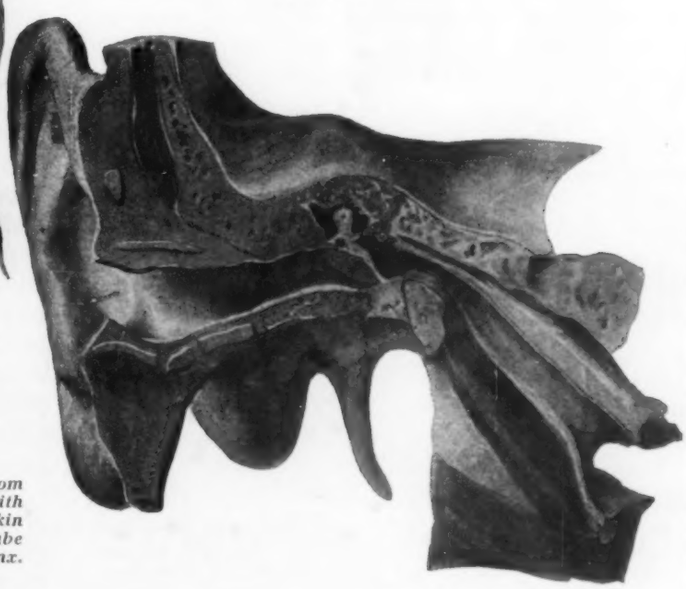


*Fig. 85.—Section through the right ear viewed from in front. In the center is the drum membrane with the tiny ear bones; outside it a canal lined with skin leads to the surface; inside it the eustachian tube lined with mucous membrane leads to the pharynx.*

*Fig. 86.—Mucous membrane of embryonic pharynx, seen from in front. In the center the thyroid gland and lungs (trachea) are growing off from it; on the left from above downward the eustachian tube, then the pocket of the tonsil, then the parathyroids and thymus. (From Braus, Anatomie des Menschen, Springer.)*

*Fig. 87.—Muscles of the pharynx from the right side. (From Spalteholz, Human Anatomy, Herzil.)*

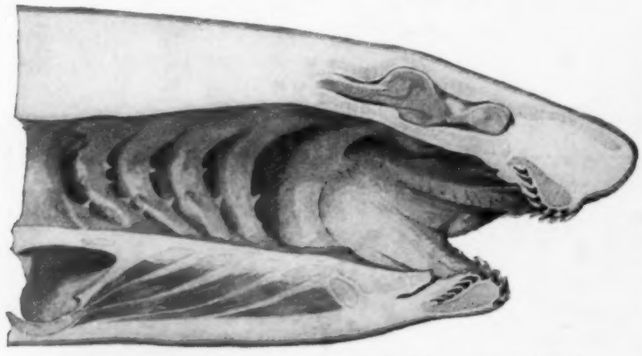


*Fig. 88.—Mouth and pharynx of a fish (skate) showing the teeth and the series of arches that make the walls of the foregut, or pharynx. (From Braus, Anatomie des Menschen, Springer.)*

We noted in the last lesson that the base of the tongue also contains much lymphoid tissue (figs. 76 and 78), and thus the throat is surrounded by a ring of it. Nodules of it underlie and invade the mucous membrane in all parts of the alimentary canal, but it is especially abundant in the throat, and in the throat the crypts are deepest. Its function is not known. Removal of the tonsils does not leave any disability; plenty of nodules of lymphoid tissue remain. In disease the causative bacteria are usually found in these nodules. They are best developed in the first two decades of life. After middle age all of them slowly shrink and shrivel up. Their great number and close association with the mucous membrane of the alimentary tract must have some significance, but so far no one has been able to discover their exact function.

Glands secreting mucus are abundant in the pharynx but scarce in the human esophagus. In other mammals glands, both mucous and ferment forming, are more abundant in the esophagus, and the dirtier the food the more numerous are the glands; pigs and dogs have many more than horses and cats. Probably the gland secretions cleanse the surface by destroying bacteria.

The papiliae are small in the pharynx and esophagus of man, so small that they come only part way through the mucous membrane and do not show on the surface (fig. 84b). In reptiles they are long and firm and project downward like little spines. Reptiles sometimes swallow small animals alive and struggling; these little spines help the reptile to get the mass down his throat.

The embryonic alimentary tube (fig. 60, center, in the September number) is made up only of mucous membrane. It has no outer coats; it contains no blood or lymph vessels, no connective tissue, no muscles or bones. These are all added on the outside of it by the ventral, or gut, mesoderm which is applied to it. The mucous membrane is the all important layer. It lines the tube and it alone comes in contact with the food. It alone digests and absorbs it. It forms the salivary glands and all the other glands of the gut. This layer has, next to the embryonic ectoderm, the most varied and important potentialities of any tissue in the body. In the head and neck it gives off buds, which become important organs. The lungs are so formed from it (fig. 66, September number). The eustachian tube, which leads from the pharynx to the ear (fig. 85), is an outgrowth from it. Some buds become separated from it and form glands and these deliver their secretion direct to the blood stream. These are glands of internal secretion. Those that bud off from the pharynx are the thyroid, the parathyroids and the thymus (fig. 86).

Around this tube of mucous membrane the ventral mesoderm adds first a layer of connective tissue carrying blood and lymph vessels, nerves and masses of lymph cells such as the tonsils and other lymphoid nodules. This connective tissue is dense and firm in the mouth and less dense in the pharynx. It is very loose in the esophagus (fig. 84), so that in it the

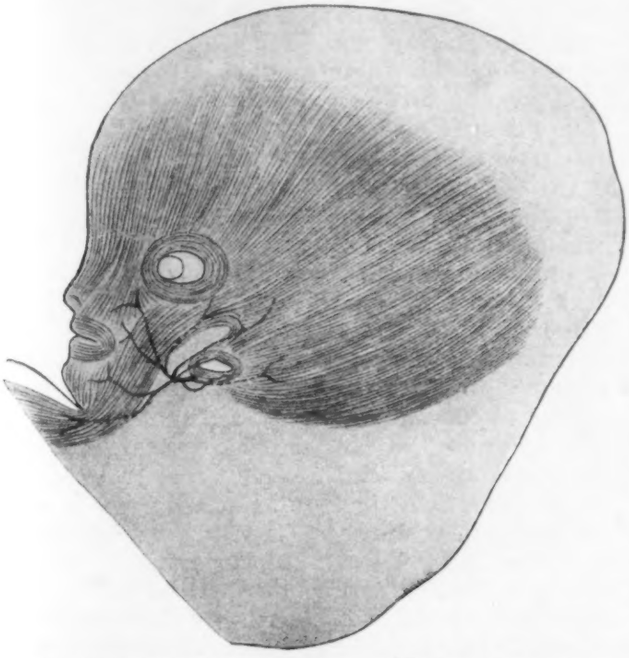


*Fig. 89.—Facial muscles of a human embryo, seven weeks old. They have all grown from a point under the chin, spreading upward and downward. (From Fischel, Lehrbuch der Entwicklung des Menschen, Springer.)*

mucous membrane is quite movable on the outer coats, falling into folds when empty (fig. 84) but being a plain cylindrical tube when full.

In the connective tissue is a delicate layer of muscles quite close to the mucous membrane and following its folds and wrinkles. It is called the muscle of the mucous membrane (*muscularis mucosae* in fig. 84b). Its function is to readjust the membrane when part is pulled out of place, as by a spicule of bone being swallowed. The glands of the esophagus extend through this delicate muscle as do also the lymph nodules. Outside of it is a more extensive layer of very loose submucous connective tissue with many elastic fibers, blood vessels, lymph vessels and nerves. This loose tissue allows the mucous membrane room to expand and adjust itself to the size and shape of any object being swallowed. Still farther out the gut mesoderm furnishes a thick muscular coat arranged in two layers, an inner circular and an outer longitudinal layer. This arrangement of tissues and membranes is characteristic of the alimentary tube; its walls are so constituted throughout its length, all the way from the pharynx to the rectum.

When we wish to go down in an automatic elevator we push a button and the elevator does the rest. It is worked by an electric current. There is a similar mechanism in the alimentary canal. When food touches the inner surface of the mucous membrane, then by an automatic process regulated by the nerves, the circular muscle below the spot relaxes, while that above it contracts vigorously. Thus the object inside the esophagus or intestine is carried downward, and as it goes a wave of contraction of the circular muscle follows it. The outer longitudinal fibers help by pulling up the gut over the mass as it is forced along. This process is called peristalsis. The muscle of the intestine, stomach and lower part of the esophagus is made of slow-moving plain muscle fibers (fig. 15, March number) and so the wave of contraction in these parts is slow. This part of the intestine is like a slow moving freight elevator.

Around the mucous membrane of the mouth and pharynx the ventral, or gut, mesoderm forms not only muscle but also bone and cartilage. The upper and lower jaws—those U-shaped bones of the face—are so formed. They enclose the upper end of the gut. A little lower down is the tongue bone, and the great cartilages of the larynx continue the series (fig. 87 and also side view of skeleton, p. 604, June number). The series suggests the successive bony arches of a fish's pharynx with jaws and gill arches (fig. 88).

In the human embryo the gill arches are actually present. The embryonic human face, throat and neck are like those of a fish (fig. 59, September number), the same bones being present in the same order. The muscles also are arranged in arches around the bones. In the fish there is a series of gill clefts between these gill arches. The water taken in by the fish's mouth goes out through the clefts. That is how he breathes. The human animal does not need to breathe that way and the human pharynx changes. The U-shaped bones remain but the clefts do not. They never quite break through. But the developing pharynx sends out pockets into each (fig. 86, and fig. 64, September number) and the skin sends in depressions to meet them. Later they nearly all become indistinct, as the muscle of each arch fuses with that of the neighboring arches.

Nevertheless, some of these pockets persist in the adult. The skin depression of our first cleft is the ear canal leading away in to the drum membrane, and the pharyngeal pocket coming out to meet it is the eustachian tube (fig. 83). Only the drum membrane of the ear separates them, and it is only $\frac{1}{250}$ inch thick. The tiny muscles that move the ear bones are pharynx muscles from the second arch.

Three other gill-cleft pockets of the pharynx persist in man. The second is around the

tonsil; the third and fourth become separated off from the main pharynx and form glands of internal secretion, the parathyroids and the thymus. The thyroid gland grows from the front of the pharynx at the base of the tongue and not from a gill pouch (fig. 86). Thus the parathyroids and thymus, important glands of internal secretion, are just bits of old gill clefts. Remnants of these clefts, no longer needed for breathing, are made over for a new use.

Every bit of our bodies is thus made over. We are only the tenants now in residence in these bodies. The structure of each part bears the stamp of other use by previous tenants and proclaims us the legatees of our ancestors.

The muscles of the pharynx, though laid down in the embryonic gill arches and firmly attached to their bones and cartilages and to the skull, do not preserve the original serial arrangement. Those of adjacent arches grow together and some spread far from their place of origin. Figure 89 shows the facial muscles of a human embryo 7 weeks old (magnified 8 diameters). All this layer of muscle is formed from the second arch. It begins as a tiny mass under the chin and spreads upward and downward as shown (fig. 70 in the October number). Some other muscles of the pharynx are shown in figure 87. The circular layer is represented clearly, being continued below into the esophageal muscle. It does not go all around, the pharynx being attached in front to the bones mentioned. The wall of the pharynx is lacking in front; it opens into nose, mouth and larynx.

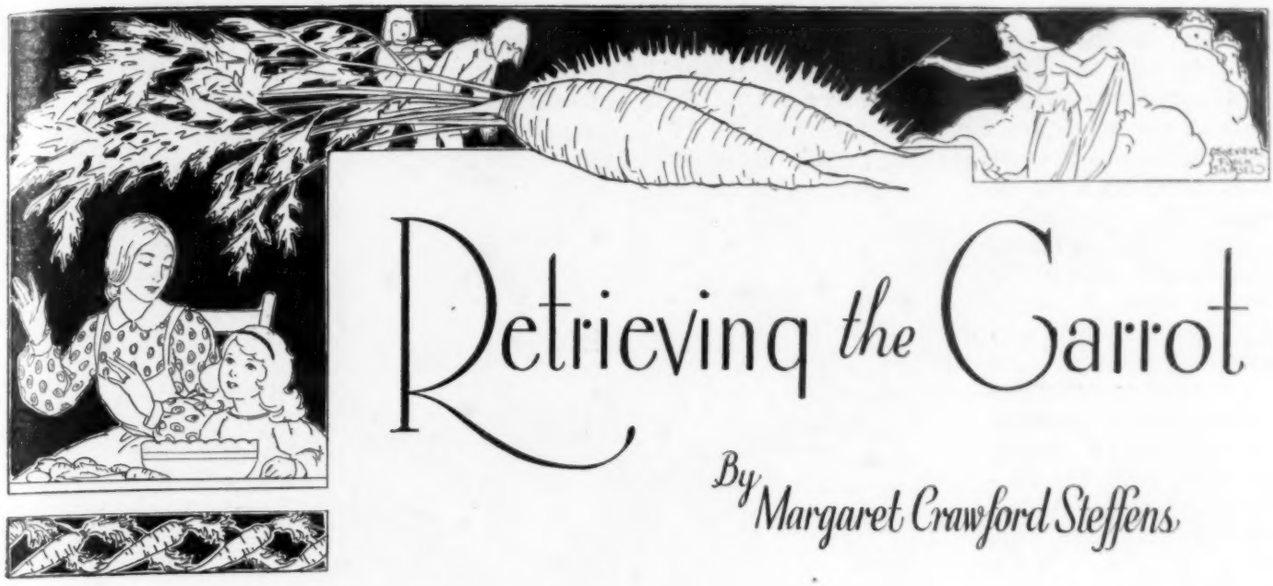
It is not possible to recognize in the adult pharynx the definite inner circular and outer longitudinal layers characteristic of esophagus and intestine. The pharyngeal muscle becomes broken up into many parts each with its own special function. This is inevitable in view of the many activities in which the pharynx and mouth become engaged—sucking, biting, swallowing, breathing, talking, adjusting the ear bones for sound vibrations, expressing emotion in the face, moving valves to and fro, such as soft palate and epiglottis. All these movements are produced by gut muscle from the pharynx.

Many of the movements are sudden and sharp. In swallowing the food passes through throat and pharynx in a fraction of a second The slow moving muscle tissue composed of short plain fibers, which is adequate in the esophagus and intestine, will not do here, so all these muscles change in character. In the embryo their fibers are plain; in the adult they are made up of striped fibers and so are capable of producing sudden sharp movements, following one another in perfect coordination, such as the lifting of the larynx and closing of the epiglottis during the lightning-quick act of swallownig. The pharynx is an express elevator.

At the top of figure 87 are two muscles that help produce the valvelike movements of the soft palate. They arise from the base of the skull. Below them and superficially placed are two muscles arranged like an inverted Y. They are attached above to the skull; they lift the larynx and tongue in swallowing. They also pull up the pharynx over the bolus of food which is going down.

Among the muscles of face and mouth and pharynx, that of the tongue is peculiar. Among all the muscles of this region it is the only one that is not of intestinal origin. It is not gut muscle but body wall muscle. It is just the top of the body wall in front. In figure 71 it may be seen to be continuous with the body wall; the latter is shown as a thin layer, dark colored in the figure, extending down from the tongue bone to be continuous below with the wall of the thorax. The upper end of the alimentary tube of mucous membrane, seeking food, reaches over the rim of the body wall at this place and opens to the surface in the mouth. Its lower surface rests against the upper bit of body wall musculature, and this bit has been impressed as the tongue muscle into the service of the alimentary canal.

Our kinship with the lower vertebrate animals is apparent throughout our bodies, but it is especially apparent in the upper part of our foregut. Much more of our faces and heads is intestinal in origin than is commonly realized. It is evident from what has been said that the intestine gives us larynx and lungs to speak and breathe with, that it gives us jaws to chew and talk with and that it gives us all our muscles of facial expression.



# Retrieving the Carrot

By Margaret Crawford Steffens

ONCE upon a time, a beautiful story was written about a mother who made of Thanksgiving a delicious excitement, in spite of a woful lack of money. The *pièce de résistance* of the holiday dinner was to be a remarkable meat pie. While preparing the meal, she talked to the child after the fashion of fairy tales. "And the potatoes were ivory, the onions the finest silver, and the carrots were pure gold!"

It is not for science to dispute the authority of fairyland. In fact, the more one delves into the realm of nutrition, the more amazing are some of the discoveries. Not the least of these is the excellence of carrots in the diet. The minerals that are important constituents of this remarkable vegetable are alone enough to engage our attention. Add to that the well known value of the carrot as a decorative note in the menu, and there is a combination without peer. Any part of the menu can be planned around the use of carrots if a little ingenuity is exerted. Certainly no one wants them in every course of any one meal, but the judicious arrangement will allow frequent use of them.

### *Raw Carrots as a Relish*

It is nothing new to hear that carrots make a welcome addition to any vegetable soup, or to a clear one, but raw carrots served as a relish with celery or radishes is an innovation well worth trying. Scrub new, tender carrots and remove only the dark spots, preserving the valuable minerals which otherwise would be discarded in scraping or peeling. Chill thoroughly, and split into dainty strips just before serving.

For a new touch in an uncooked chow-chow, add ground carrots, thus giving both color and additional food value.

For a change from the usual parsley decoration, cut either cooked or raw carrots into fancy shapes and use as a garnish with a roast or a salad. The rings formed during the growth of the carrot show to advantage in thin crosswise cuts of the vegetable. Very tiny new carrots, cooked whole, allow another form of garnish.

The field of entrées allows an interesting addition to the daily menu. For grilled carrots, scrub them, remove discolorations, and boil until almost tender in salted water. Split the cooked carrots, place on a broiler or plank with chops, sausages, sliced ham or steak, and broil with other vegetables such as sweet potatoes, mushrooms, fresh tomatoes or onions. An interesting vegetable grill may be made by combining a number of these vegetables, over which a sauce of melted butter, salt, pepper and chopped parsley has been poured.

### *New Guises Overcome Old Prejudices*

Many childish prejudices against carrots were undoubtedly acquired because this excellent vegetable was served in an insipid white sauce, which discouraged even the most obedient child. Fortunately, in this day, mothers are paying more attention to the palatableness of the foods they present to their families and are able to offer the ordinary vegetables in forms more attractively seasoned and served. If carrots are to be creamed, be sure that the white sauce is well seasoned and thoroughly cooked. Plain steamed carrots, or boiled if the liquid is allowed to cook practically dry, assume a new character entirely if browned slightly in butter. Cut raw cleaned carrots into matchsticks, boil or steam them until tender, and serve them with a sauce of melted butter, chopped parsley or chives, salt and pepper.

Salads composed of vegetables offer a wide variety to the ingenious cook. Cold cubed carrots add both color and valuable mineral content to any salad. Try them in a mixed fruit salad. Or marinate them for a few hours in a well seasoned French dressing, chill thoroughly and combine with an egg and asparagus salad. An excellent main-dish salad for warm days is made by combining two cups of ground raw carrots, and two-thirds cup of peanuts which have been ground with the second coarsest knife of the food chopper. Mix this well with enough boiled salad dressing to hold it together and serve it on crisp lettuce.

An interesting combination of raw vegetables is composed of one cup of crisp, chopped cabbage, one cup of chopped sweet white turnips, one-half cup of chopped celery, one cup of chopped carrots, and boiled dressing or mayonnaise to taste. One-fourth cup of chopped parsley adds color and variety to this salad. When unexpected guests arrive, substitute for the mayonnaise French dressing to which Rouquefort cheese (mashed) has been added, and a most intriguing dish is the result. This salad is a boon to the cook during the winter months when the supply of vegetables is somewhat limited.

*The inexperienced cook has some pleasant surprises coming in the many uses she can make of that economical vegetable, the carrot.*

Another main dish is made of two chopped, hard cooked eggs, one cup of chopped, cold cooked ham (or any other cold meat), one cup of shredded lettuce, one-half cup of raw, chopped carrots, and mayonnaise to taste. The addition of chopped celery or pieces of fresh tomatoes gives variety to this dish.

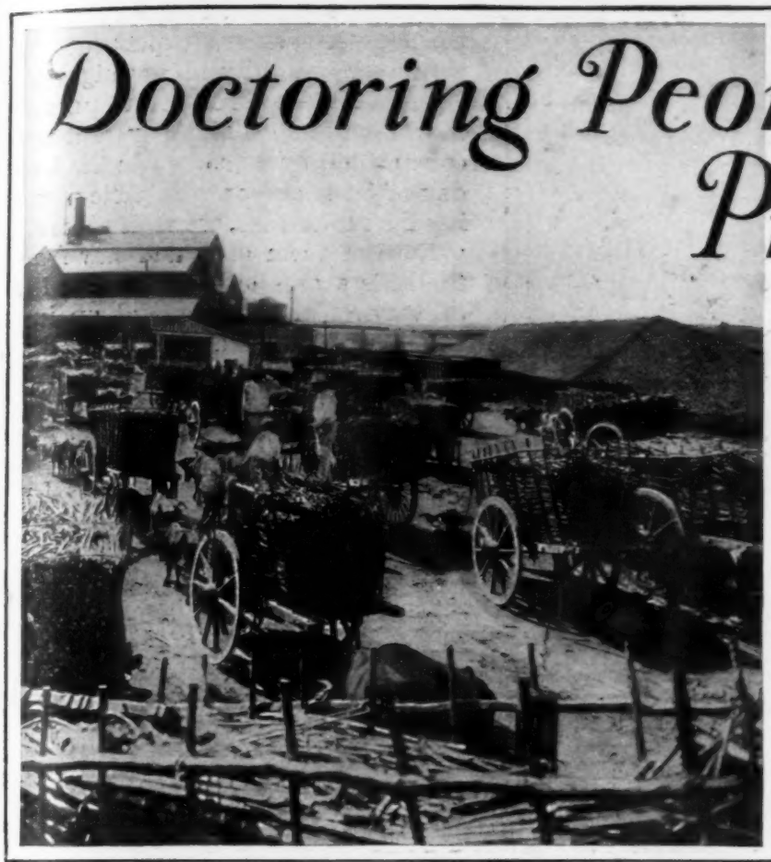
The carrot makes its rather startling entry into the world of desserts, when a half-cupful, ground fine, is added to raisin pie. When apples are scarce or high, substitute one cup of ground carrots for two cups of the chopped apples in any recipe for mince meat, or even less carrots—as one to six.

Plum pudding which will please even the most particular cook may be made economically by putting one cup of suet, one cup of seeded raisins, one cup of currants or seedless riasins, one-fourth cup of orange peel, one small carrot (making one-half cup), and one small potato (making one cup), through the food chopper. Add one well beaten egg and one-half cup of molasses. Sift together three and one-half cups flour, one teaspoonful each of soda, salt and cinnamon, and one-half teaspoonful each of ginger, cloves, nutmeg and allspice. Add alternately with one cup of sweet milk to the first mixture. Steam for three hours.

# Doctoring Peons with a Practicante

By
Arthur Torrance

**The Experience of a Tropical Hygiene Specialist on the Sugar Plantations of Porto Rico**



*Ewing Galloway*

***Scene at a Porto Rican sugar central.***

THE chief steward approached my table. Looking up in reply to his salutation, I saw that he was accompanied by an upstanding, well-appearing young native, black as polished ebony. "Pardon me, sir," said the steward, "but this 'ere citizen states that he brings a letter of introduction to you."

I acknowledged the introduction by taking the man's letter to read, and in another few moments found myself sharing the breakfast table with a Porto Rican medical practicante, whose name was Hernando Elijo. I had come to Porto Rico to take over the health work in a group of sugar centrals. He had been sent by the management from the hinterland to meet me when my vessel arrived at the docks in the harbor of San Juan.

The eager and business-like appearance of my first Porto Rican acquaintance won me completely, and the enjoyment of that early first breakfast in this island with a native was repeated many times afterward, for I learned that the educated Porto Ricans have a delightfully charming manner, coupled with an earnest seriousness that wins admiration and friendship.

For months I had been looking forward to reaching this romantic island of the Caribbean Sea. The heroic determination of its people to overcome the ravages of the September cyclone appealed to my imagination. My mind was alert for new impressions. My new friend helped me with the difficulties of language and I hurried through the formalities of getting off the steamer, cleared my baggage, elbowed my way through the hordes of natives—dock laborers, porters, fruit sellers, guides and rogues—and, in less than an hour, we set off for a glimpse of the capital city of the island.

There was no reason for disappointment with my introduction into Porto Rico. Life surged with a tremendous force upon me on every hand the moment we left the landing pier. The waterfront, which seemed at first a series of cobblestone lanes hemmed in by gray stone stores and crowded with teeming human beings at business, broadened out later into boulevards and green-grassed plazas where the tired banker or beggar could sit down in peace and rest. The narrow streets of the business district were cool most of the day, being shaded from the sun by overhanging verandas of the buildings. From many of these streets, looking down through the channel of hurrying motors and lumbering ox carts, we caught glimpses of blue water and a shore line fringed with palms.

Later in the day we returned to the Palace Hotel. After lunch we packed the small pieces

*Above is a dilapidated native shack at a sugar central. Thirty natives sleep inside it. This housing is typical of the kind used by economical managements.*

*At the left is a dormitory that houses 60 workers. It has no screens and no ventilation. The camp site is in the midst of a vast swamp jungle.*

*Below is a camp in which conditions approach the ideal. It is one of the best on the whole island.*

of hand gear into an automobile, together with my microscope, which when traveling abroad I keep as close to me as a Scot does his pocketbook, and set off for a journey through the mountains to the headquarters of a large sugar plantation situated on the other side of the island. It took us five hours, steady driving; time which sped by rapidly because of the rich fund of information given to me by Hernando in regard to the laboring peon and his health condition as a result of the tragic cyclone.

As we left the city, the towering fortress of Morro Castle grimly watched us pass, and shortly afterward we whirled by the little fort of San Geronimo built on a peninsula at the end of an avenue of glorious palms. Then began the drive through a paradise that delights the soul. In a good car, traveling on well made roads, my guide pointed out the historical spots and we viewed the thousand landscapes created by the generous hand of Nature. The vistas made gorgeous by the shining of a brilliant tropical sun would gratify the most ardent desire, for the island is a treasure land of beauty to the brain-fagged metropolitan weary of bricks and mortar, noise and crowds.

During the course of the journey we traveled a great part of the way over the old military highway. Then we went through the pass in the mountains, a highway that was constructed by prisoners in the heyday of Spanish control. After leaving the mountains, we rolled by rich valleys of farm land and saw from the hills scores and scores of miles of waving green, chopped up into squares by roads and tied together by knots of native buildings. This was the land of sugar-cane, the sweet soil that brings prosperity to this island of enchantment, the labor fields of a hundred thousand peons.

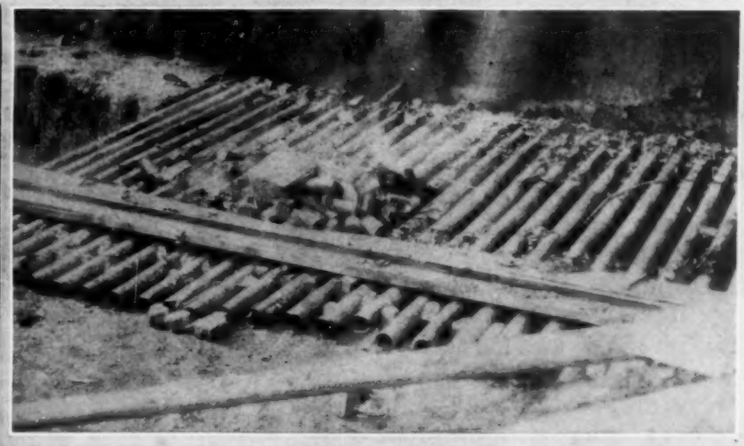
During the days that followed it was my duty to familiarize myself with the environment of what is called a modern sugar central. This constitutes the center of a group of haciendas or plantations from which sugar-cane is brought. It is the business center and manufacturing headquarters, for here are located the sugar factory, the administration offices, and the homes of the local executives and foreign labor staff. Usually the hospital, too, may be found here, together with the headquarters of the sanitary and hygiene staff; for in many of

the more modern centrals, as in the vast rubber plantations of the East Indies, the tea farms of Burma and Ceylon, and the coffee shambas of Central Africa, the alert business executives are increasingly aware of the fact that health and hygiene are as essential to production of a commodity as are crops and machinery.

In the course of my investigations I discovered two distinct kinds of sugar central from the point of view of the executives' regard for the land laborers' health. In a few places the doctor and the clinic are considered nothing more than a necessary evil. The work of the medical officer for a standard of hygiene is conducted under constant protest of short-visioned managers concerning costs. In such plantations one does not have much difficulty in discovering a series of old-fashioned and obsolete policies of administration which very substantially keep down the company's dividends.

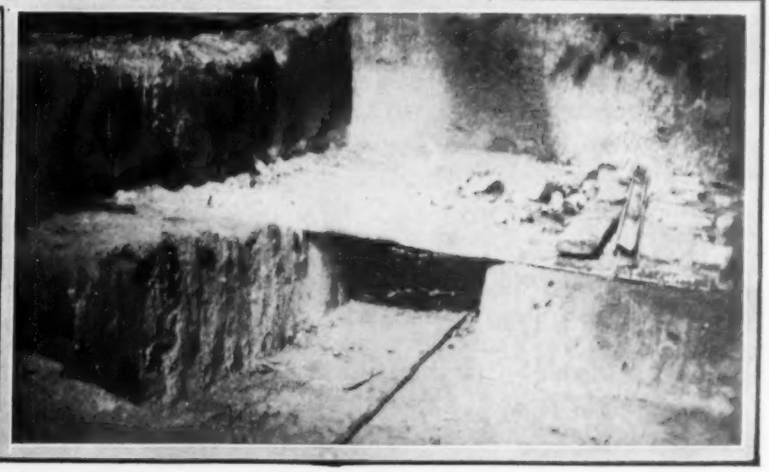
But more frequently the doctor and his staff loom up as definite pecuniary assets. In some of these centrals I found modern hospitals, fully equipped with the latest appliances and supervised by trained medical officers, and a health organization that would be a credit to a large city. It was in these places I discovered happy contentment among the laborers and a feeling of genuine pride among the Americans, who had left their hygienically safeguarded homeland to devote their talent and time to the development of American business abroad. It seems to me, therefore, only a matter of simple right that every measure for good health and safe hygiene should be installed by the companies regardless of the expense.

There are other centrals that lag behind this safe standard. For instance, a central at which I found myself soon after arriving at the island deplorably lacked these essential requirements. The general manager, in his choice and inimitably hospitable manner, invited me to stay with him at the Casa Grande on the hill. In a conversation that evening on the subject of plantation health, he informed me that during the cutting season the company had a labor force of more than 10,000, and because of the peculiar customs or laws of the island they were bound to take care of each laborer's family. Thus there was an army of human beings numbering more than 25,000 souls that were dependent for their well-being on this one concern, a truly great responsibility—and also a great expense. But when



*An improved incinerator at a sugar camp. The presence of hundreds of water containers constitute a menace. This incinerator is being replaced by one of an improved type.*

*Newer types of incinerators are shown to the left and below. They show all that remains after the consumption of 35 barrels of wet garbage.*



it is noted that the firm paid a 100 per cent dividend last year, it is readily seen that the obligation has its recompense.

The next morning I set out to inspect the health equipment provided by the company to take care of the medical and hygienic needs of these 25,000 persons, and the strip of territory they lived on—25 miles long, reaching in width from the mountains to the sea. I found one qualified American doctor, who is assisted from time to time by a junior doctor sent down from the United States to relieve him. In addition there were also two native practicantes—one of them well trained, thoroughly efficient, and human minded toward the sufferers who needed his attention. The other, living at a distant hacienda, unsupervised except for a weekly visit by the medical officer, was inefficient and far more interested in the crops of cane he was raising on rented land in his native village. There was also a child welfare nurse, assisted by two scrubwomen, whose task it was to keep clean the bungalow clinic and medical offices. In this bungalow there were two small rooms in which were crowded nine cots, and this constituted the only hospital space on the plantation for 10,000 active workers and 15,000 women, children and old men.

The argument is put forward by officers of companies where such meagerness of health equipment is made public that the companies are not in the island as philanthropic institutions. It is claimed that they are established for the purpose of successful business and to earn money for their stockholders. With this argument we can hardly quarrel. But it is a pleasure to point out similar business concerns which, because they realize a responsibility for the health and happiness of their servants and adequately meet it, are just as successful if not more so than the companies that carry on with a nervous labor force that exists painfully under the stress of fever, many of whom are hustled into early graves by infected and voracious mosquitoes. It was in such a place that I found the central manager, who refused his white employees permission to play golf because when he was young he did not play golf and "he dum—dum—wouldn't put up with it."

The health work carried on by concerns with limited equipment and without hospitals consists of morning clinics and in the afternoon a series of hacienda visits.

### *The Morning Clinic*

The morning clinics serve the sick among the factory employees and those from the headquarters village and the nearby haciendas. A medical officer is in charge and usually sits in his office listening to the self-described symptoms of this heterogeneous crowd of patients and writing out prescriptions for them. There is no discipline or order. The patients, male and female, native or American, are all mixed together and crash their way to the desk of the mighty to secure the coveted slip of paper that means free medicine. Meanwhile the practicante is industriously toiling away amid the swirling, milling crowd of waiting patients, either dressing wounds or filling prescriptions. There is no privacy. The women patients must discuss their condition with a horde of others listening. I was present on several occasions when white women were obliged to explain their symptoms in this public manner, hiding their embarrassment behind the hopeful thought that none of those present understood English. There is no proper examination room, but occasionally the doctor leads one of his patients to a sort of emergency operating theater where he can find quiet enough to listen through his stethoscope and room enough for the patient to stick out his tongue.

In one clinic I attended there was not the slightest routine for proper diagnosis. The microscope was little understood. The medical officer, an old-fashioned practitioner who had been at the station for over a decade, had but little use for what he called "new-fangled ideas." Consequently the sigmoidoscope, the microscope, blood-pressure machine and various other testing apparatus were under ban. The good man had failed to keep up with the times and as a result did not understand the use of these invaluable aids to diagnosis.

### *A Hacienda Visit*

The medical officer's duty in the afternoon was to visit the haciendas. It was this form of medical service that particularly interested me and accompanied by my guide, the practicante, I took over the hacienda visits. There are about thirty haciendas or outlying plantations in the territory of this company, the furthermost of them being about 25 miles away from the headquarters clinic. The doctor usually tries to cover all of these outstations once a week. Each afternoon a certain group of them are selected and the doctor or practicante, taking scores of bottles of cough mixture, liniment, numerous packages of epsom salt, and a large assortment of powders and pills sets out in a motor car to make the visits.

When he arrives at one of the haciendas the doctor drives into the yard of the majordomo's house, and like an itinerant fishman blows his horn and awaits his customers. Soon the peons, running in every direction from their little cabins, flock about the car, all carrying bottles of various shapes, sizes and stages of cleanliness. The doctor begins to dole out his pills and powders according to the complaint of the sufferer or the representative of the sick who is sent to describe it. For quite often a person

ill in bed and, being too sick to venture out, sends a wife, child or friend for the medicine.

Occasionally the medical officer is not able to understand the complaint from the sort of explanation given and decides to visit the hut. I remember one of these occasions, when Hernando advised that I make a call. The hut was about a mile away and in turning the car we skidded over into the ditch. The practicante called to some men with bullocks to come and haul us out. When these arrived and had finished their job and had us headed right again, one of the bullock drivers turned to the practicante and said: "If you are going to see my father it doesn't matter now. He died while you were in the ditch."

*Antimosquito workers with oil sprayers on carts. By these modern methods some of the sugar centrals protect the peons' health.*

Long experience with this form of medical attention has developed a sort of imperiousness on the part of the peon in his attitude toward the visiting doctor. This can best be illustrated by repeating some of their requests. For instance, an old man leaning on two sticks will stagger up to the car shouting. "Oiga doto! sciento mucho dolor en las coyontinas. Deme un poco de uso eterno." "Listen doctor! I've got much pain in the joints. Give me some liniment for external use." Or a mother, burdened with the handicap of several children tugging on her skirt, will say: "Mire doctol! yo tengo-mucho dolor de cazeza, deme mas tabletas aspirma." "Look here doctor! "I've got much pain in the head, give me some aspirin tablets."

(The form of language used is the colloquial Spanish. It is incorrect and has many variations in sound and spelling.)

The practicante used to become much annoyed at this apparent arrogance and on one occasion exploded indignantly to the doctor with the exclamation, "Listen to them, treating the doctor as a peon, describing their own symptoms and demanding medicines." Indeed one does seldom hear the polite niceties of "please" and "thank you." I remember only one woman in all the hundreds we treated smiling back at us and saying, "gracias," or "thank you."

But it is all easily understood when we bear in mind that by the nature of the service they get, it has become a habit for them to approach the doctor in this manner. Nowhere else in all the wide world are people's ills remedied so expeditiously; certainly at no greater cost, for practically the whole endeavor is a waste. There is absolutely no attempt made at scientific diagnosis; and, outside the palliative good of an aspirin, the cause of the headache is never investigated.

There are plenty of incidents in these merry-go-rounds of the doctor that relieve the monotony of the day's work. I remember one old man bringing a woman up to the car. Upon examination I discovered that she was blind. Investigation showed that the man had lived with her for four years, but when I asked him what her name was, he blandly replied, "How should I know?" The woman, who was also hard of hearing answered my numerous shouted inquiries concerning how long the trouble had been coming on. "Dos anos"—"two years." She then volunteered the information that she had been so constipated that it blew her eyes out.

Then there was the woman who came with the complaint "Mi mareo no puedo comida." Her husband was not able to eat and she added, "He sleeps all day." When the practicante informed her that she did not have to worry about cooking for him in this case, she went away happy.

Another woman approached the practicante vociferously telling him that she was ill and could not keep her food down. When the practicante suggested that maybe it was because she was going to have a baby, she said, "Oh! I had not thought of that," and she ambled off, amid the hilarious shrieks of her many neighbors.

There was also the time that we were called into one of the huts of a small settlement amid the hills. When we entered the hut, which was filled with men, women and children, some one directed us to the rear room. In the gloom I saw two cots, both of them occupied by women. The sick people always roll themselves up in sheets and it is ever a difficult matter to make a proper examination. In this case I reached over, and pulled the patient toward me. I noticed she slid over rather unresistantly. I was

in the act of putting my stethoscope over her heart, when I heard the husband speaking behind me. "Oigo dotol le otras mujer infermo, esta mueta tres dias," he jabbered. "Listen, doctor, it's the other woman that's sick. This one has been dead three days."

But the type of backward medical officer described was not general, or nearly general, throughout the clinics of the centrals in the island. It is pointed out simply as an example of what happens when a company is indifferent to its health standard and maintains a doctor merely to comply with the law or because one is considered as a necessary evil. These are the policies that make it imperative for government supervision of plantation hygiene and health and insistence upon standard equipment, together with qualified men to give examinations, diagnosis and treatment.

Whenever companies employing large forces of labor become aware of the importance of health and hygiene in relation to their production, they do not consider the health of their tremendous labor forces as a mere economic statistic. Instead they make certain of securing medical officers who are highly trained guardians of health, rather than units of labor, and who are able to command the respect and friendship of their chief executives and rank with them in the life of the community. There is some need in the American colonies for the development of a tradition that the medical officer is a conservator of health—a savior of life—and is more than an ordinary employee of the firm that is producing a commercial commodity.

### *Voodooism Still Flourishes*

Neither does the modern medical officer have it all his own way. It is not my intention in this article to discuss to any extent witchcraft or voodoo worship, but it would be glossing over too lightly a condition of powerful influence not to mention in passing its importance in relation to a medical officer's work among the inhabitants.

Certain forms of the voodoo ritual are regularly practiced throughout the islands. The force of the mysterious faith sways and controls a vast majority of the superstitious peasants. In almost every village one may find a zealot of voodoo practice, who scrupulously performs its rites with fidelity and devotion. He is treated with awe by the villagers and is implicitly obeyed by them in the little community life they have. They do not hold their ceremonials near their dwellings but always move off into the black, forbidding forests of the hills. Sometimes entire villages leave their homes and trek away, and, swallowed up in the dark, hot silences amid the trees, they yield themselves unrestrainedly to their peculiar worship.

The doctor is often handicapped in his work because the frightened peons will not call for his aid until voodooism has first been practiced. Then it is often too late, and when the patient dies of neglect, it is the white man's medicine that is blamed. Just before leaving the island I accompanied a medical officer who was called to a case in an outlying village. When we arrived we discovered a young man who had been ill with typhoid for three weeks. He was beyond any hope of recovery. Investigation brought out that he had been carried to the woods for a ritualistic ceremony three times and now when he was at death's door the white doctor was called.

### *Casting Evil Spells*

One also runs up against the practice of casting evil spells. I arrived one morning at the little hospital of a sugar plantation to find the place seething with excitement. The parents of a boy who was sick had listened to the lad's complaints of the pain a practicante inflicted when he dressed his wounds. They had then returned during the night and secretly deposited a *ouanga* beneath the door step. This consisted of a broken bone tied to the high-smelling wing of a hen with a piece of ribbon. It had been placed under the steps so that when the practicante put his foot on them in the morning the demon of evil would enter his body and torture his mind until he died. One of the cleaning women who had come early to wash the floors had spied the death *ouanga* and her exposing it caused the uproar. Circumstances like this are fairly frequent and it is a problem of the hospital executive to keep the ardent zealots from doing serious harm to sick patients through their pernicious influence. It has been found advisable to forbid these persons to visit the hospital wards.

The witch-doctors, while not so harmful in their practice, nevertheless exert an ascendant mastery on the peon's superstitious mind. They are numerous throughout the island and all appear to be making their practice profitable. I was once called to the home of the local witch-doctor. They have no compunction concerning the effect such a visit would have upon their partisans. They simply carry nonchalantly on, blithely indifferent.

When I arrived at the house I found the porch and front room crowded with natives. The witch-doctor was an old woman. She was receiving her patients in one room, but she stopped when she saw me to direct me into another room in which were four of her family sick with typhoid and malaria. As soon as she saw me attending to my task she returned to her natives. She was charging 25 cents a consultation. With each patient, she would with much ceremony make marks—she could not

write—on a piece of paper. Then after making several mystic passes with her hands she would burn the paper. The patient would admit feeling better or cured. I was told that she had brought about several quite miraculous cures, which accounted for her popularity.

This witch-doctor also sold holy water. In her travels she had found an artesian well somewhere in the bush, which she kept secret. About once a month she would disappear and return a few days later with a 4 gallon petrol tin filled with the water. This would be peddled out during the month at 25 cents a quart. The afternoon I visited her I saw people leaving with a total of seventeen quarts. She had eked out the four gallons with her own well water.

While I proceeded, in view of all her visitors—for there is no privacy in Porto Rico—with my task of taking the sick persons' temperatures, securing blood films and specimens for examination, a fetish to her, she carried on with her job of chalking symbols on paper and sanctifying the result with fire. In her opinion and that of her followers, we were not rivals, but just fellow workers doing our job.

Luck often plays into their hands. Before I left her district a fire broke out one night and destroyed the entire village where she lived. The only buildings that escaped destruction were the stone schoolhouse and the old witch-doctor's wooden house. It is needless to say her prestige among her clientele has increased a thousand-fold since.

The executives—usually called general managers, or "jefe grande"—of these sugar centrals are often men of great heart and character. Their position is important, for the prosperity, happiness and health of the peons of the neighboring plantations depend on "el corazon del hombre en la casa grande," "the heart of the man in the big house." They are men of great experience, whose lives are flavored with the salt of human emotion. The life is a difficult strain. The nature of their tasks enforces loneliness. There are many varying demands for quick impartial judgments. In the small communities over which they rule there are always small-minded, self-seeking persons who are forever running to the chief with tales and gossip. They are the sneaks of the centrals, the maggots in the apple. And if the chief, either because of the infirmities of age or a brain weakened by tropical sickness, commences to give ear to their furtive yarns, life in the homes of the central employees becomes miserable.

But wholesome indeed is the executive who is man enough to play with the men who work for him. Unlike the occasional veteran who, sizzled by the tropical heat, has mind and heart shrunk in proportion to the bulging of his pocket, who has been too long in the tropics and has lost the ability to come back to the world and enjoy its comforts, the real leaders of men are those who win loyalty and cooperation from the white staff members of the many departments and who are blessed with the worshipful affection of native Porto Ricans whose feet are on the threshold of freedom.

I was sorry when my stay in this beautiful island drew to a close. It had been a pleasant and profitable experience to travel with my friend the practicante. I learned that considering the limited training of these men and the difficulties they experience, ofttimes as buffers between the doctor and the half frightened, much superstitious native, they are usually men who wear their talent thin in the helpful and consecrated task of alleviating pain.

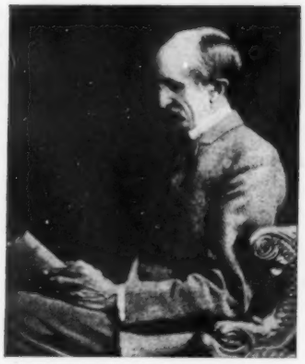
When the morning of my departure dawned, Hernando grasped my hand in friendship. He had shown to me the need of the people for well trained medical practicantes. Finally, blue eyes to brown, we signaled adios. Then I crossed the gang-plank and started home.

## THE ANESTHETIST

By E. O. Laughlin

*I've seen them come into the anesthetic room—*
*All white enameled, narrow, silent as a tomb—*
*Trembling with apprehension, pulses racing, eyes*
*Dilated, clammy sweat upon them; heard their cries:*
*"Doctor, my heart is weak, I suffocate! O doctor, please!"*
*(Inured are hospitals to frantic prayers like these.)*
*And I have seen him stroke their clammy brows, and heard*
*Him soothe and reassure them with a whispered word,*
*Compassionate, caressing, father-like—aye, more,*
*Christ-like, indeed, as one who understood, and bore,*
*Himself, their poignant pangs; yet had no dread of death.*

*So lulled and reconciled, before the first cold breath*
*Of lethal ether, fear was gone. Into his care*
*They gave themselves in trust, to walk with him where'er*
*He led, down in the Valley or across the Deep.*
*And so he gave to his beloved patients sleep.*



*Trudeau established the first sanatorium in America.*

*Finsen proved the value of light in treating tuberculosis of the skin.*

*Rollier was first to use heliotherapy in the treatment of surgical tuberculosis.*

*Potain first used artificial pneumothorax in 1885.*

# Founders of Our Knowledge of TUBERCULOSIS

## By H. J. Corper

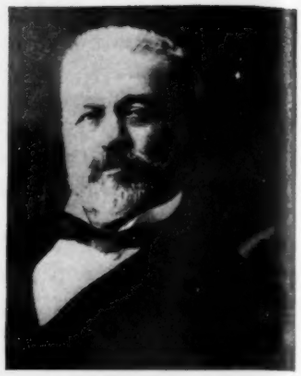
### Part II

IN AMERICA the first sanatorium was established in the Adirondack Mountains in 1882 by a consumptive physician, Dr. Edward L. Trudeau. While still a young man, Trudeau decided to go into the navy but gave up his appointment to the naval academy to nurse his dearly loved brother, who had tuberculosis. He occupied the same room and sometimes the same bed with him and after his death entered the College of Physicians and Surgeons of New York, in 1868, to study medicine.

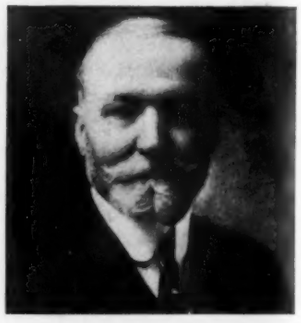
Shortly after marriage and graduation, Dr. Trudeau began to feel tired all the time and examination of his chest by a senior colleague revealed an active tuberculosis of the left lung, a death signal to him. Dr. Trudeau thought that if he had only a short time to live he would like to spend it in the "peace of the great wilderness" of the Adirondacks and arrived there in 1873. The idea of building a sanatorium came to Dr. Trudeau after reading an account of Brehmer's sanatorium in Germany. In the summer of 1882, the year Dr. Koch discovered the tubercle bacillus, with the kind financial assistance of trusting friends the first cottages of the present Trudeau Sanatorium at Saranac Lake were planned.

In spite of his own physical handicaps, Dr. Trudeau not only treated his patients successfully but carried on laboratory investigations on tuberculosis. Finally, shortly before his death in 1915, he established the Trudeau Research Laboratories for the purpose of eradicating the plague. The example set by Trudeau in America has resulted in the establishment of hundreds of sanatoriums with a consequent tremendous saving of life as well as spreading "glorious hope" for all who need help and comfort in their battle against tuberculosis.

Thus the sanatorium has come to stay and stand as an eternal emblem for man in the combat against the tubercle bacillus, and the names of Bodington, Brehmer and Trudeau will ever be household words as generals in one of the



*Forlanini in Italy was one of the few who dared to follow in Potain's footsteps.*



*Murphy in America reported success in the use of artificial collapse of the lung in 1898.*

*Brauer used pneumothorax extensively and developed thoracoplasty in Germany.*

*Sauerbruch had performed 700 thoracoplasties up to 1926.*

*A memorial to Trudeau, designed by Gutzon Borglum, was erected in 1918 by former patients who have found health at Saranac Lake.*

greatest wars man has ever waged against a living foe.

In ancient times men worshipped the sun god and erected temples to him whose beneficence they hoped thus to retain. Even the Neanderthal man sought out caves facing south or southeast, and of all the gods of antiquity healing powers were attributed usually only to those connected with the sun. The first day of the week, Sunday, was originally set apart for the worship of the sun. The Romans loved the sun and took sun baths, but heliotherapy fell into disuse until the eighteenth century, when physicians began to recognize that the effect of sunlight was due not to the heat rays but to the chemical rays.

### *Beginning of Modern Heliotherapy*

Conclusive proof that the scientific application of light was of great value in many superficial diseases, including tuberculosis, was first presented in 1893 by Niels Ryberg Finsen (born, Dec. 15, 1860), doctor of medicine in Copenhagen, Denmark. The cloudy atmosphere of Copenhagen soon focused Finsen's attention on the use of artificial light and the results obtained by him with the arc light in the treatment of lupus and other forms of skin tuberculosis proved remarkably beneficial. In 1896, Finsen became director of the Institute for Light Therapy at Copenhagen, but like so many of the leaders in this long fight against the tubercle bacillus he was also a consumptive and an inveterate worker whose worldly existence was cut short by this disease before the full fruits of his labors could be realized.

The real beginning of heliotherapy in tuberculosis is attributed to Dr. A. Rollier, who began the systematized treatment of surgical tuberculosis, including tuberculosis of the bones, joints, skin, peritoneum and glands (but not of the lungs) with generalized heliotherapy in 1903. Rollier established himself in Leysin, Switzerland, 4,000 feet above Lausanne, in the Swiss Alps after noting the speedy tendency of wounds to heal and remain uninfected there. He has achieved astounding success in treating tuberculous conditions of the limbs.

To Finsen and Rollier may be attributed the tremendous impetus for studying and applying heliotherapy to diseases of mankind. Light alone is not a specific agent for the treatment of any form of tuberculosis but it must be given a place as a valuable adjunct in treatment to be classed with Bodington's triad—fresh air, rest and nutritious food—which were so successfully put to practice by Brehmer and which today are considered indispensable in the scientific treatment of tuberculosis. Every modern sanatorium is at present equipped to take full advantage of sunlight and in every possible way to derive benefit from its advantages, while obviating the dangers coincident to its unintelligent and promiscuous application. The story of the full benefit to be derived from heliotherapy in diseases has just been initiated and only time will tell where the possibilities may take us and whether its proper use in pulmonary tuberculosis may not be beneficial.

### *Putting a Diseased Lung at Rest*

With the gradual recognition of the value of general rest in the treatment of tuberculosis, it seemed only natural that its local use should find increasing and more extensive application. With its more or less empiric but strikingly successful use in surgical forms of tuberculosis, there developed a desire among physicians to apply the same principles to the lungs in pulmonary tuberculosis. It was easy enough to

apply a plaster cast or splint to a limb or the spinal column to treat the tuberculosis, but how could a cast be put on the lung to put it at rest without resulting harmfully? Yet 75 per cent of the tuberculosis of adult life occurs in the lungs.

There were great hazards involved in the application of any procedures to put the diseased lung at rest, and it was only after a long struggle that artificial pneumothorax and thoracoplasty became accepted by the medical profession. Aside from the many dangers involved in the introduction of a foreign substance into the chest to put the lung at rest, there remained the problem of finding a harmless and inert substance that could be introduced or withdrawn at will; this was essential before the success of artificial pneumothorax was assured. Even to think of doing a radical surgical chest operation—thoracoplasty—upon the consumptive was beyond the wildest dreams of even the most daring surgeon of the nineties. Yet something must be done to put the lung at rest, to abolish the dreaded cavity consequent to the destructive processes of tuberculosis in the lung and to prevent the fatal pulmonary hemorrhage, and it must be done in an organ that does not rest from birth until death and that moves at a steady rate of from twenty to twenty-five breaths drawn in and out every minute. It must be done, and it was done, by the constant striving and perseverance of men who built slowly and cautiously, but securely, as they went.

*Albee replaced tuberculous backbone with a healthy transplant from the bone of the leg.*

*Pirquet devised the tuberculin test, which made early diagnosis of tuberculosis possible.*

Many clinicians had theorized on the possibility of curing phthisis by means of pneumothorax, but Pierre Carl Edouard Potain, a French physician of the Necker and Charité Hospitals of Paris, deliberately injected air into the chest in three patients with pulmonary tuberculosis, in 1885, because he believed collapse of the lung was beneficial as it immobilized the organ. Two of the patients were restored to health. As a result of his researches he concluded that nitrogen was the least rapidly absorbed of all the ordinary gases available for producing artificial pneumothorax, a fact that stands today.

Notwithstanding Potain's high rank as a physician, he found no followers and, in 1888, an Italian physician, Carlo Forlanini of Pavia, injected air into the chest of a person with a one-sided case of phthisis; later he tried the same procedure on two other patients.

At a meeting of the American Medical Association, in 1898, a Chicago surgeon, John B. Murphy, gave a precise account of his experiences with artificial pneumothorax, and a year later, Dr. A. E. Lemke, Murphy's assistant, a consumptive himself, reported on fifty-three cases treated by the intrapleural injections of nitrogen. These reports did not meet with great success and Lemke died of tuberculosis soon after publishing his cases. Murphy, fully convinced of the scientific value of the method, refused to continue its use personally because it would take him out of the field of surgery, and collapse or artificial pneumothorax therapy departed from America for Germany, where it attracted the attention of Prof. Ludolf Brauer of Marburg in 1905. There the procedure struck fertile soil, so that within a few years its value had been clearly demonstrated by Brauer and his pupils and its use spread to the four corners of the world. Thus has been added another weapon—artificial pneumothorax—to the armament of man in his war upon the tubercle bacilli, not a specific but an extremely valuable method in certain cases of consumption.

But there are cases of phthisis in which the disease has obliterated the space between the lung and the chest wall and in which collapse could work wonders but artificial pneumothorax cannot be successfully applied. Brauer was not content to rest until he had solved this problem and, in 1907, he reported a partially successful operation of rib removal, or thoracoplasty. This was followed, in 1911, by a method—paravertebral thoracoplasty—beset with practically no difficulties; it has produced striking results in the sixty cases in which he has operated.

But Brauer was not a surgeon and the method was further exhaustively tested and modified by Prof. Ferdinand Sauerbruch (1911), who has recorded his gratifying experiences in a series of 700 operations performed up to 1926. Thus the principle of rest has finally been successfully applied to the lung, in spite of the apparent difficulties encountered which made artificial pneumothorax unfeasible in some cases, and now it remains only to determine whether the individual consumptive can stand the conditions imposed by the collapse of one lung and especially whether the disease has not progressed too far or is not too active on the contralateral side.

Surgery has not only contributed greatly to the welfare of the consumptive by making thoracoplasty available but has endeavored to remedy the deformities consequent to tuberculosis of the spine—Pott's disease, the malady of the hunchback. In America, the home of surgery and anesthesia, Dr. Fred H. Albee, an orthopedic surgeon, heard the call and devised the Albee operation, which consists of splinting the broken-down back bone by means of a bone transplant from the leg, thus straightening and strengthening the carious spinal column and relieving the embarrassments on the internal organs occasioned by the collapse of the tuberculous vertebrae.

### *Tuberculin Test Devised*

When Robert Koch presented tuberculin to the world in 1890, he hoped it would prove of value as a specific therapeutic agent. In spite of many endeavors this hope has not been realized, but a young Viennese physician, Clemens von Pirquet, in 1907, devised the Pirquet test with tuberculin for the diagnosis of tuberculosis. This proved highly specific in young children and made possible the diagnosis of the disease in its early stages before the child had developed the intractable, hopeless type and at a time when treatment would still avail.

### *Fight Must Continue*

Would that we could meet all the men through whose efforts the knowledge regarding tuberculosis has grown, but our honors to them must be erected like a monument to an unknown soldier in a continuous war against man's minute, insidious enemy, the tubercle bacillus. Legions have been sacrificed but man must go on. Lest we forget, let the future be guided by the past, as Col. John McCrae has said in his poem, "In Flanders Fields":

> Take up our quarrel with the foe.
> To you, from failing hands, we throw
> The torch. Be yours to hold it high.

---

# Serious Problem in Migratory Child Workers

MIGRATORY child labor is an increasingly serious problem in every part of the country, a survey by George B. Mangold of the University of Southern California discloses.

Two factors are named by Dr. Mangold as the principal reasons for this situation—seasonal occupations and cheap transportation. The fruit and vegetable industry with its short seasons makes for migrations of whole families. Allied to these occupations but somewhat resembling factory work is the labor in canning and preserving factories.

### *Never See Inside of a House*

Most migratory child workers travel with their parents in cheap automobiles from one part of the country to another. They live in camps, tents, discarded freight cars, shacks and roofless huts. They practically never see the inside of a house. When one considers the barbarous living conditions he cannot but wonder what the effect of this itinerant life will be on their social and industrial stability, Dr. Mangold observes.

Although most migratory child workers travel with their parents, thousands of boys travel over the country by getting lifts from strangers. This situation did not exist ten years ago, Dr. Mangold points out, but the development of better roads has greatly increased the wanderlust in young boys. Some become seasonal workers in orchards and truck farms, following the crops; others fall into the hands of social workers.

The automobile camp has become a temporary home for this type of traveler. In some states labor camps are maintained. The equipment of these camps varies widely and serious health menaces are present in many of them. Some plan of control is urgently needed, Dr. Mangold continues.

Both the labor camps and the automobile camps should be raised to a minimum level of decency in such essentials as sanitation, room, water supply, conveniences and opportunities for privacy.

### *Plight of Mexican Workers in California*

Probably the worst conditions described by Dr. Mangold exist among Mexican workers in California. Wages are too low to admit of decent living conditions. Frequently fruit growers make no provision for these workers, who then pitch squatty shacks or tents at some favorable location, such as near a convenient irrigation ditch. Under such conditions, coupled with lack of parental care, the children soon suffer from vermin and disease.

Society must be concerned with the type of education and the standards of life obtained by these migratory children, Dr. Mangold concludes. An effort must be made to provide for them the minimum standards consonant with the ideals of American life and citizenship.

HYGEIA

THE HEALTH MAGAZINE

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*535 North Dearborn Street, Chicago*

# *Plain Facts about Health and Disease*

## PSYCHOLOGICAL QUACKS

IT IS a far cry from the mysticism of the past to the psychoanalysis of Sigmund Freud and the behaviorism of John B. Watson. It is not so great a gap that separates the mesmerism of Friedrich Anton Mesmer and the love cults of Lahissa and Hexter. From the earliest times human beings have lived in fear of death and pain, of misfortune and despairing love. Confronted by situations in which the answer to the riddle could not be found, human beings have always resorted to superstition and faith healing. They have sought for long life in bottles of strange elixirs; for success in money, matrimony and health through incantations and charms. Few have been satisfied with the long hard road and the struggles that lead to accomplishment. The short cut to the end of the rainbow is the stock in trade of the psychological quack.

Mesmerism was the first great system of treating disease by the mind and of offering satisfaction to unanswerable questions through the soul. When quacks are limited to physical efforts, they are likely to fail, unless they depend on the accomplishments of science. There are no limitations to the claims that may be made concerning what the quack psychologists call the soul. The problems of the soul are inevitably associated with problems of morals. The success of psychoanalysis is dependent on its preoccupation with sex. Sigmund Freud recognizes that the libido in the love sense is the fundamental emotion that stirs mankind and that in some instances it even dominates hunger. The Oneida Community, one of the greatest of the early religious cults, was an experiment in sexual relations with spiritual wives, including regulated promiscuity and new methods of sexual performance. When trick diets are added to this combination, the appeal to the mind of the credulous moron is almost insurpassable.

The modern quack psychologists capitalize the public interest in true psychology. For whatever the victim may have, they undertake to advise him or her—and it is usually her—concerning mental and vocational ills. With psychological insight, they appeal primarily to the natural love for greater and greater financial and social success. They surround their performances with all the paraphernalia of quackery that appeals to the human emotions. Darkness, perfume, the low voice, music and the appearances commonly associated with great spiritual leadership are the come-ons by which the uneducated and the unfortunate are attracted. Out of such commercialized psychology fortunes have been made and lives are daily being ruined.

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## THE ANTIQUITY OF DISEASE IN MAN

THE diseases of prehistoric man have left records which scientists read. The study of disease of prehistoric times is comparatively recent. Modern man, in his study of ancient disease, is limited largely to the changes that disease causes in the bones. The earliest written records contain many references to disease, some of them sufficiently accurate to permit identification of those diseases with the diseases of today. There is evidence that disease, especially infectious disease caused by living germs, must have passed through an evolution like the evolution of man himself. Minute forms of life, similar to the disease-causing bacteria, must have been on earth millions of years before man. They adapted themselves as parasites on man's primitive ancestors and have continuously adapted themselves to life upon and within man and to the causation of disease.

The evolution of new or supposedly new diseases of man is also a study of great interest. Some diseases apparently new to mankind are new only in that they have only recently become transferred to man from some lower animal species. Others, supposedly new, may be new only because their history is incompletely known.

In his study of ancient disease, the scientist looks at ancient pictures, which may show abnormalities of the external surface of the body and thus give an insight into conditions prevailing at the time the records were made. He studies prehistoric instruments and implements, the use of which in surgery he may easily guess, and he investigates the mummies that come from Egypt and other ancient homes of human beings. In the study of the mummies the x-ray has yielded valuable results. Then, too, the bones can be examined and looked at with a microscope. If any of the soft tissues remain attached to the bones, they may be stained and studied under the microscope.

The evidence obtained in this way indicates that tuberculosis and chronic or rheumatic inflammations of the joints, both widely prevalent throughout the world today, afflicted man for centuries before the days of written records. Some of the skeleton remains of men of the stone age—some twenty to fifty thousand years ago—show dental caries and chronic inflammatory changes in the jaws and other bones.

American students of prehistoric disease have gleaned much knowledge from study of the material made available by recent explorations of the ancient cities of Peru and of the burial grounds of the early North American Indian. Pictorial records from Peru indicate the occurrence in those days of Peruvian wart disease, a disease which still occurs in that country. Examination of mummified human remains has shown dental caries and pyorrhea to have been prevalent, and the spread of infection from the mouth and nose to the sinuses and to the ear was as common in ancient days as it is today.

Many remains of infants have been found, indicating a high infant mortality. However, the skeletons of the children do not show the occurrence of rickets among the American children of those early days. Rickets also apparently did not occur among the inhabitants of prehistoric Egypt, although the disease has left its record in the remains of those who dwelt in ancient northern Europe. Osteoporosis, a disease that led to increased porosity of the bones of the skull, was prevalent in both North and South America, although now extremely rare, if indeed it occurs at all today. By some observers this disease, which began in childhood, is held to be similar to rickets of the skull as it is known today.

Definite evidence of syphilis has not been found in any American bones antedating the fifteenth century, a point of considerable importance in attempting to trace the spread of this disease throughout the modern civilized world and one that tends to disprove the belief, held by some medical historians, that syphilis was introduced into the modern world by the returned sailors of Columbus.

Arteriosclerosis, or hardening of the arteries, a disease whose increasing frequency has been ascribed to the hustle and bustle and the wear and tear of our present machine age, has left the unmistakable marks of its occurrence back in the days when things were supposedly slow.

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## THE FAMILY MEDICINE CHEST

FREQUENTLY attention has been called in these columns to the manner in which strange concoctions and samples of all kinds, outworn apparatus and what not accumulate in the family medicine chest. Outworn prescriptions vie with ancient safety razor blades for most of the space. In an attempt to find out what most people keep in their family medicine chests, letters from readers listing the contents of the medicine chest and commenting upon them were asked for by HYGEIA last March. Unfortunately none of the letters merited publication.

The editorial served, nevertheless, to awaken many mothers to the fact that the family medicine chest was actually a family menace. Among the strange items found as listed in some of the letters were: old cloths for sterile bandages, discarded powder puffs, cracked atomizer bulbs, horehound candy, shoe horns, curling irons, a ten year old sponge, a package of morning glory seeds, ancient homeopathic specifics, hair grease, mange cure, face bleach, twelve tooth paste tubes squeezed empty, fifty different cold remedies, permanent wave combs, the remaining partners of pairs of cuff links, thirty different antiseptics, nail polish, ten kinds of bath salts and a discarded set of teeth.

If the inventory served any purpose at all, it was to establish the fact that the American public needs more and more education concerning the significance of what are actually useful household remedies. A household remedy should be one the action of which is simple; it should contain usually but one active ingredient; it should be used fairly frequently and it should seldom be poisonous. Prescriptions

ordered by the family physician for a definite illness should never be kept for the future, but should be promptly discarded when the illness for which they were prescribed has passed. Drugs deteriorate with age and prescriptions for one illness will not be useful in the future.

In a family medicine chest simple laxatives, bicarbonate of soda and other remedies, including antiseptics, should be kept on the top shelf. On the second shelf surgical supplies, including bandages, adhesive plaster, droppers, scissors and similar materials, should be kept. On the lower shelf the things commonly used, such as tooth paste, powders, face creams and similar substances should have their regular places. The drug preparations regularly useful around a home will certainly come within a dozen different bottles and packages.

The wise policy would be to go over the family medicine chest at least once every three months for the purpose of discarding materials not constantly in use. It might also be well to have the family physician look the chest over when he happens to be in the house.

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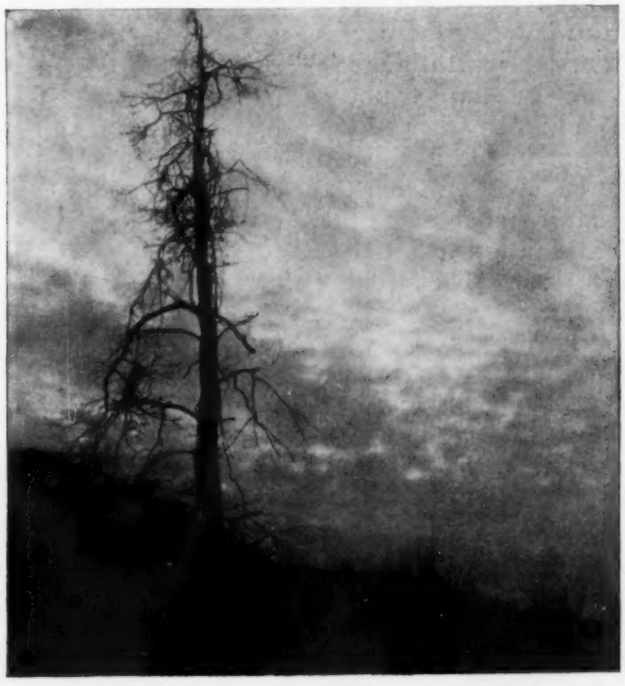
## MAN AS A MACHINE

THE great argument as to whether a man is or is not a machine is settled for those that have the ability to read and to understand Prof. C. Judson Herrick's new book called "The Thinking Machine." He recognizes man as a machine, but a machine capable of independent thought and action—the only machine that has such powers.

Of course a human being is not a machine like a steam engine or a printing press. If a belt or a cog wheel breaks in an inanimate apparatus, the machine will probably stop until the damage is repaired. The human being is the most complex machine that can possibly be imagined. It has tremendous automatic powers of regulation and repair. There is order and system in nature which may be called evolution or which may be credited to some higher power. There is no support for the fatalistic conception of life nor for the belief that everything that is or has been in life was predetermined.

Professor Herrick writes with a great background of knowledge of biology and evolution. He realizes that the fundamental laws of nature affect man just as they affect every other particle on our sphere; hence he conceives man as the highest type of living machine and of life as the effort of this machine to adjust itself to its environment. The human being has the greatest powers for self-regulation of any mechanism on earth. It can even control the disappearance or appearance of its followers by scientific genetics.

In the course of Professor Herrick's exposition he reveals the modern knowledge of the anatomy and physiology of the human body, of its mental processes and of its future. Thinking is the great power possessed by man and self-control is the apotheosis of that power. Intelligent effort is the highest function of mankind.



## *DENMARK'S HEALTHIEST*

**Nothing's wrong in Denmark when it produces such lovely children as 5 year old Yvonne Darville. She recently won a national competition for the prettiest and healthiest child of her age in the country.**

*Underwood & Underwood*

Hark Ye, kindly, Maid and Man
Please put your rubbish in my can!
Then there's no litter on the street.
You've helped to keep our Island neat.

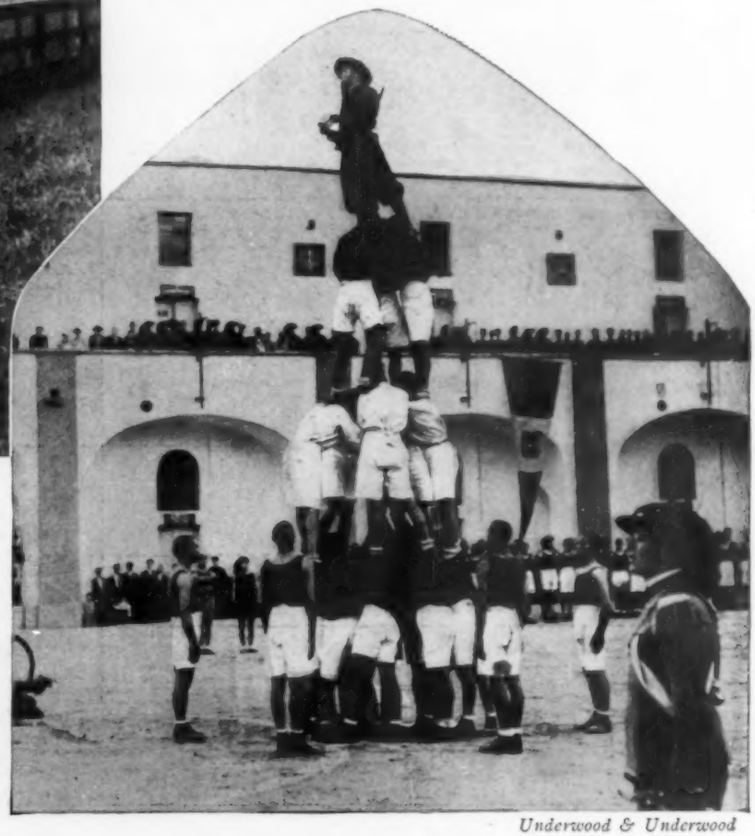
*Pacific & Atlantic*

## *RUBBISH!*

**Gay figures and playful rhyme evoke good-humored cooperation from the residents of Newport, R. I., and make the homely trash can an actual ornament to the landscape of the fashionable resort.**

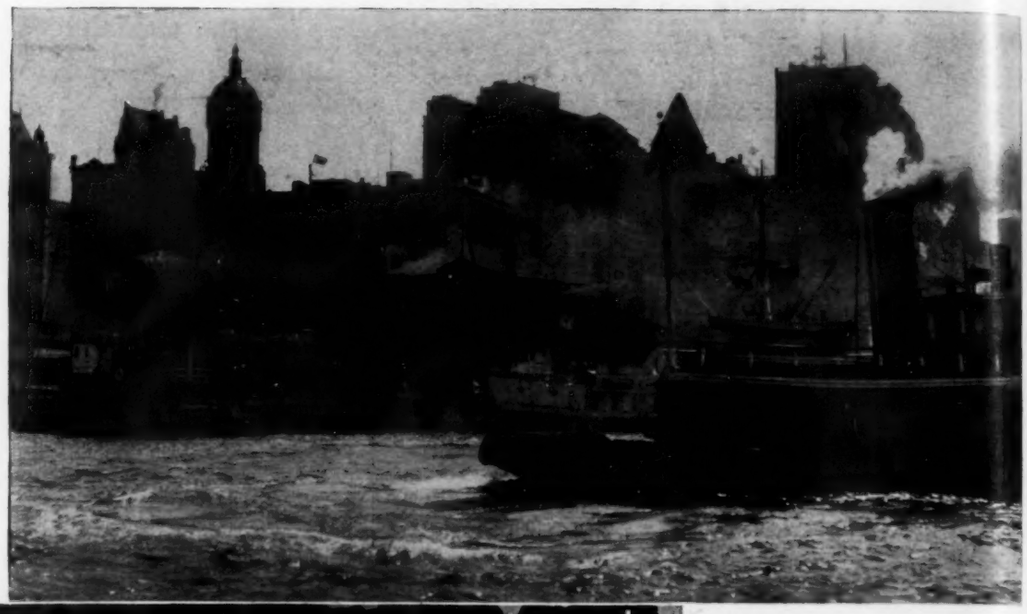
## *PYRAMID FOR A PRINCE*

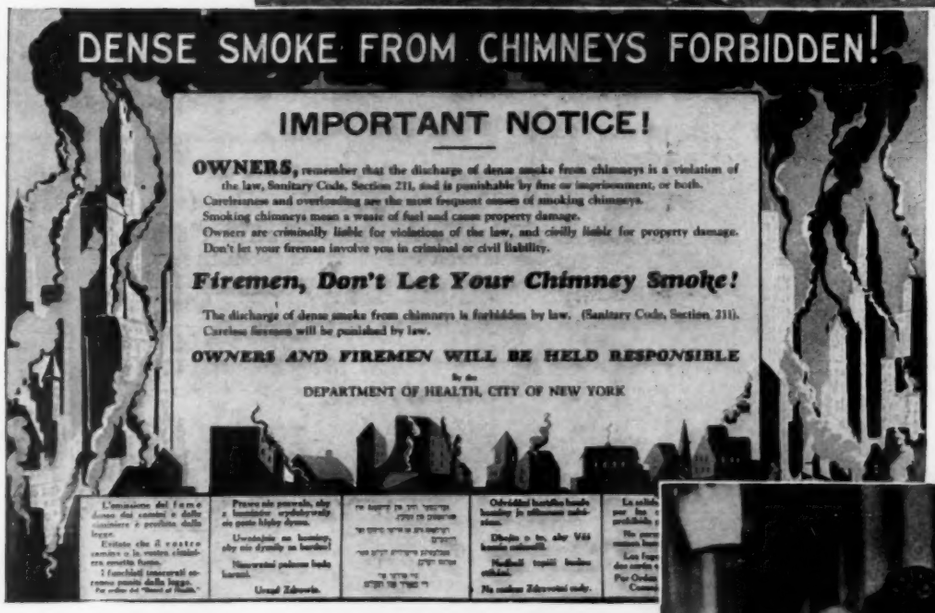
**Acrobatics by the Borsaglier, crack infantry troop of the Italian army, pleased Crown Prince Umberto on a recent visit of inspection at Naples.**



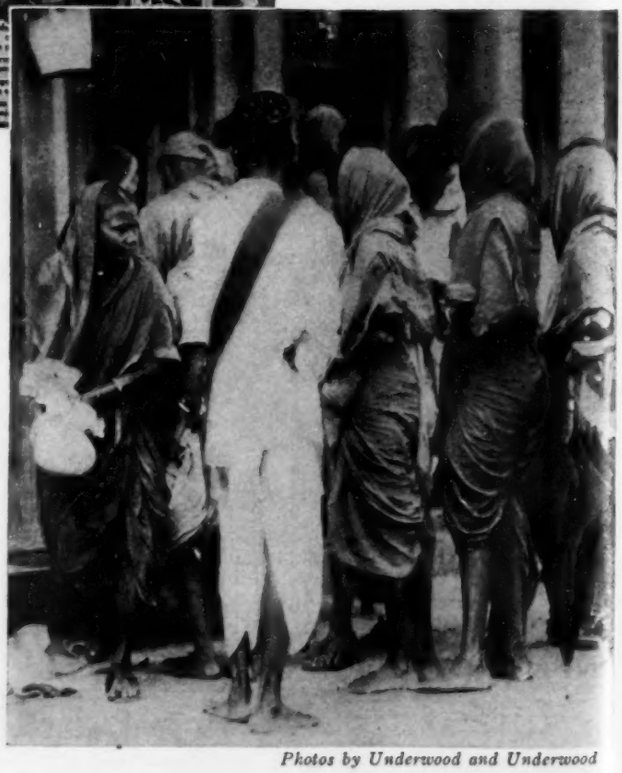
*Underwood & Underwood*

SMOKING CHIMNEYS THAT BESMUDGE NEW YORK'S SKYLINE are caught by a health officer's camera.




DENSE SMOKE FROM CHIMNEYS FORBIDDEN!
IMPORTANT NOTICE!
OWNERS, remember that the discharge of dense smoke from chimneys is a violation of the law, Sanitary Code, Section 211, and is punishable by fine or imprisonment, or both.
Carelessness and overloading are the most frequent causes of smoking chimneys.
Smoking chimneys mean a waste of fuel and cause property damage.
Owners are criminally liable for violations of the law, and civilly liable for property damage.
Don't let your fireman involve you in criminal or civil liability.
Firemen, Don't Let Your Chimney Smoke!
The discharge of dense smoke from chimneys is forbidden by law. (Sanitary Code, Section 211).
Careless firemen will be punished by law.
OWNERS AND FIREMEN WILL BE HELD RESPONSIBLE
by the
DEPARTMENT OF HEALTH, CITY OF NEW YORK

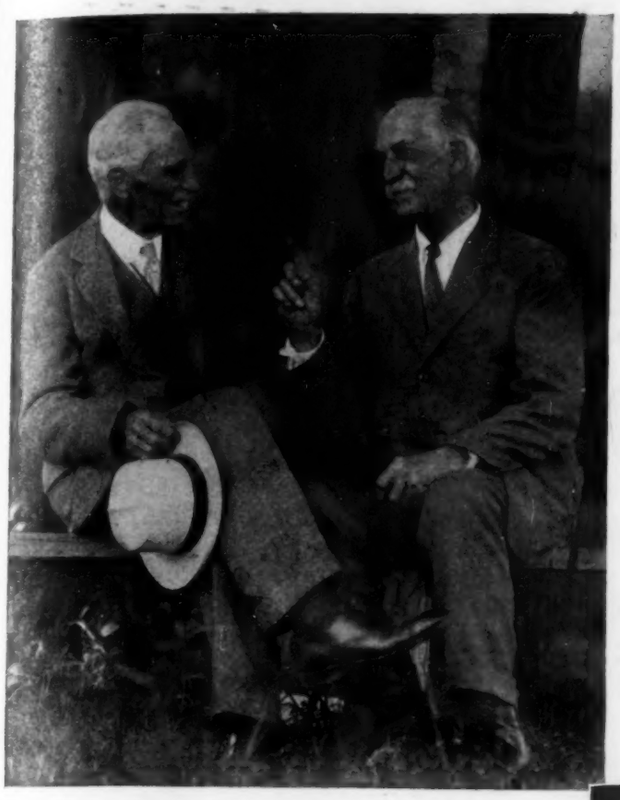
AMMUNITION IN THE NEW YORK HEALTH DEPARTMENT'S CAMPAIGN against the smoke nuisance.



*Photos by Underwood and Underwood*

## *RELIEVING POVERTY IN INDIA*

Overpopulation, disease and unhygienic living conditions impoverish India's masses. At the right sons of Mother India are shown receiving a daily allowance of rations from a Red Cross station.



GEORGE WRIGHT, hale and hearty at 82, shortstop for the Boston Red Sox in 1869, talks over old times with Horatio S. White, on the right, who played on the Harvard team that won the amateur championship the same year.

ELLEN O'DONNELL, aged 14, grasped the wheel of her own sailing boat in the annual races at Marblehead, Mass.

CRIPPLED YOUNGSTERS LITERALLY ATE THEMSELVES OUT OF HOUSE AND HOME when they were entertained in a house of ice cream by a Long Island factory.

*Photos by Pacific and Atlantic*

*Prince Slipshod*

# Prince Slipshod and Doctor Tidy

*By*
*Marguerite Jacoby*

*Doctor Tidy*

PRINCE SLIPSHOD pursed his pink lips and spit squarely upon the Royal Nurse's plain black shoes.

"Your Highness, Your Highness!" shrieked that good woman, "for shame! A Prince treating a lady so—for shame, I say! Your Royal Mother, the Queen, shall hear of this; she shall that!"

But the young Prince only threw back his blond head and roared with mirth, and again he pursed his pink lips and spit, and yet again.

"Slipshod," cried his Royal Mother the Queen, who had but entered the room, "how could you! Oh, how could you!"

"Most gracious Queen Mother, a thousand pardons"; and Prince Slipshod bent his royal head and kissed the lacy cuff that banded the Queen's right sleeve.

The smile that crossed the Queen's face faded quickly into an unbecoming pout:

"My cuff! My cuff! Why 'tis as black as the bosom of mother earth! Ah, my son, my only son!" And the Queen turned and went sadly from the room.

"See what you have done!" said the Royal Nurse reprovingly to her charge. "Blackened with your greasy mouth the Most Sacred Mother's cuff; for shame!" She wanted to box his royal ears, but at that moment seven Pages entered, to escort His Royal Highness to the breakfast room.

There, seated between his lovely mother, the Queen, and his stately father, the King, Prince Slipshod drank his orange juice with gusto, and he left about the fluted edge of the tumbler a murky rim, the imprint of his unwashed mouth.

The royal waitress painstakingly wiped away the telltale stain with the royal napkin, but Prince Slipshod only gave her a sly wink and made with his greasy lips another rim about the tumbler.

When the buttered toast was served, Prince Slipshod ate greedily of it and wiped his royal fingers and even his royal chin upon the escalloped edges of the royal tablecloth.

*Prince Slipshod bent his royal head and kissed the lacy cuff that banded the Queen's right sleeve.*

The King sighed and the Queen shuddered violently. Royal princes are not spanked and they had tried all other ways they knew to break him of his slipshod habits.

Late the next afternoon, Prince Slipshod, who always insisted upon feeding the royal cat from the tea table with his own fingers and without so much as cleansing them before shoving food down his own throat, fell violently ill: He was so ill that great doctors were summoned from within and without the land.

Untiringly they worked over the restless form of the blond Prince, and it is shameful, but necessary, to relate that they found his royal neck and ears in a sordid condition; which, after all, is only a nice way of saying that they were very, very dirty.

The King's own physicians, having noted this fact, called in still another doctor, one who lived near the palace gates but whose time was too well taken caring for the poor and the needy to have courted the attention of His Majesty, the King.

On the day of the new doctor's arrival, the little Prince lay very still, save for those times when he mustered all his strength to keep away the nurses when they would have washed his ears and neck.

"Doctor Tidy!" announced a Page in a clear, high voice, and Prince Slipshod stirred uneasily. He did not like the sound of that name; it had a familiar ring.

He did, however, open his eyes to view the stranger, and he saw standing beside the royal bed a man so handsome that even the King was dwarfed beside him.

He was tall and strong and his thick blond hair was smooth and clean.

Prince Slipshod was lost in admiration. Indeed, His Highness would have sacrificed half his father's kingdom, to grow to look like this handsome stranger. He said as much.

Doctor Tidy made no reply, but he bent his fine head to see his small patient better, and Prince Slipshod could feel the dark red flush of shame burning into his own cheeks. His eyelids drooped and his heart beat hard and fast.

"Oh, that he should see me like this, and he so strong and clean!" said the Prince to himself. He wanted to bury his untidy head in the pillow.

*Doctor Tidy ordered brought to the bedside a large basin filled with warm water and soap suds, and he scrubbed the royal flesh of the young Prince until it was pink and fresh. "You must keep clean now."*

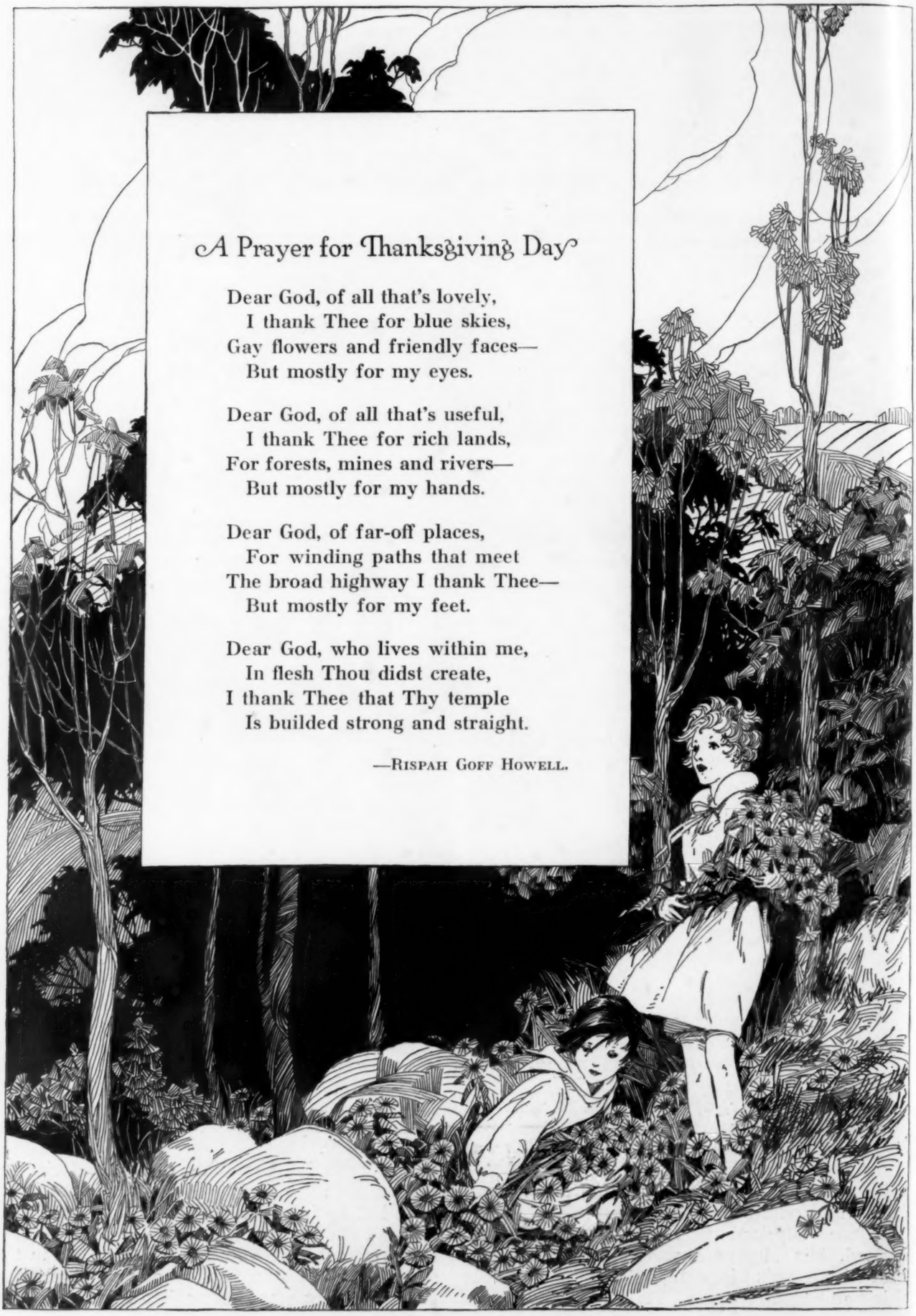
But if Doctor Tidy knew what the young Prince was thinking, he gave no sign. He ordered brought to the bedside a large basin filled with warm water and soap suds, and he scrubbed the royal flesh of the young Prince until it was pink and fresh. Presently he spoke, in a voice so deep and mellow that the young Prince never forgot it:

"You are ill, your Royal Highness, from infection. Infection in this case is caused from nothing more than filth. You are clean now and you must keep clean; that is, if you want to grow into a man of strength and muscle."

"Like—like you, Sir?" asked His Royal Highness humbly.

A smile flashed across the young doctor's face as he made answer: "Yes, Your Highness. You have but to join the Tidy family to grow fine and tall and strong!"

The young Prince buried his tidy face in the soft pillow and soon fell fast asleep. And from that day on, he was never called Slipshod again.



## A Prayer for Thanksgiving Day

Dear God, of all that's lovely,
I thank Thee for blue skies,
Gay flowers and friendly faces—
But mostly for my eyes.

Dear God, of all that's useful,
I thank Thee for rich lands,
For forests, mines and rivers—
But mostly for my hands.

Dear God, of far-off places,
For winding paths that meet
The broad highway I thank Thee—
But mostly for my feet.

Dear God, who lives within me,
In flesh Thou didst create,
I thank Thee that Thy temple
Is builded strong and straight.

—RISPAH GOFF HOWELL.

HEALTH *and the* SCHOOL

*Edited by*
*J. Mace Andress, Ph.D.*
*67 Clyde Street, Newtonville, Mass.*

# *Teaching Health Ideals*

ABOUT twenty years ago an educator who has now achieved a national reputation in the field of applied psychology described the psychology of ideals as a vague and dark territory in educational theory. He dismissed the entire subject with a dozen sentences dealing with the matter in a superficial fashion. That attitude has been more or less common since that time. Writers of educational theory bow profoundly before the throne of ideals, acknowledge their ignorance, and then pass on. Even the authors of the most recent book on the principles of education take not more than half a page to consider ideals.

Among extreme behaviorists, who disregard the mind, there can be, of course, no such thing as an ideal. Yet to the majority of teachers and educators the ideal is something so real in human experience that like Banquo's ghost it will not down. Within the last year there have been two notable contributions to this field; namely, Hartshorne and May's "Studies in Deceit" and Charters' "The Teaching of Ideals." It is an intriguing field of exploration, and we may expect it to attract other scholars in the next few years.

Health educators are often so intent on inculcating knowledge and habits that the function and value of ideals may be forgotten and the methods of attaining them may be ignored. An ideal, as defined by Dr. Charters, "is a trait which has become the object of desire." In health education we can think immediately of any number of traits or characteristics that a person ought to have. Cleanliness, courage, good posture, a balanced ration, carefulness in avoiding accidents and cooperation with others for community welfare are good examples. A person may have a trait that has never been an ideal because it has never been an object of desire. A child may conceivably be selfish without ever having desired consciously to possess that trait or without even knowing that he has it. Consequently unselfishness could never have been an ideal. As Dr. Charters suggests, it is only when a trait is set apart and becomes an object of desire that it becomes an ideal. Care should be taken to distinguish between habits, or skills, and ideals.

The importance of having an ideal like that of cleanliness is imperative as soon as we begin to examine human situations. Ideals are standards of action. The boy who has no ideal of personal cleanliness may come to school without having washed his hands and face or, as sometimes happens, with traces of cleanliness suddenly disappearing with the ears, below the collar and above the wrist. We might expect a boy with a high ideal of cleanliness to appear at school not only with clean hands, face and neck but also bearing evidence of having taken a full bath recently. An ideal tends to keep life steady, so one with a high ideal of cleanliness is likely to be clean with regularity. The same principle applies to communities. A town that has filth in the streets and swarms of flies that infest screenless houses, restaurants and schools is a town without a clear-cut ideal of cleanliness.

Not only does an ideal serve as a standard of action but it modifies action itself. One who has an ideal of cleanliness will probably wash his hands more thoroughly than another who does not have such an ideal. To the extent that we are familiar with a person's ideals we know what to expect of him. If a person has a high ideal of cleanliness we unhesitatingly recommend him to a position in which cleanliness is imperative.

Health ideals are objectives, then, on which we should focus in health education. They are guiding ideas that set standards for behavior. No health work can be thought of

A window display depicting health ideals that are a part of the teaching program of the Chicago Tuberculosis Institute.

as being successful unless pupils have acquired ideals conducive to good health. The word ideal is often interpreted as something that cannot be attained. This is not necessarily so. Some ideals may be realized and others may not. Schools should set for their pupils reasonable goals that are ordinarily attainable.

The heart of the difficulty in teaching ideals centers around the procedure that is to be adopted. It is impossible in this brief editorial to refer to more than a few principles. We venture to suggest the following:

1. *Have clearly in mind the ideals that you wish developed.* Cleanliness, for example, is a word that covers a number of specific activities. As a general term, it is meaningless to first grade children. Just what may you reasonably expect of children of this age? Should a child always be clean or has he a legitimate right as a child to get dirty? Is there a difference in dirt? Is some dirt filth which should always be avoided?

2. *Provide for direct and indirect instruction.* Pupils should have reliable information so that they may know why they should do certain things. But the mere acquisition of information does not always result in appropriate action. A pupil may learn that salad is desirable in the diet and pass a good examination on its caloric and vitamin content and yet in actual experience he may absolutely refuse to tolerate salad in any form. The reason is that salad for him has not become an object of desire. The eating of salads has not become one of his ideals. In some way his emotional life must be quickened. Information colored by emotion affects ideals and conduct. A high school boy who read a great deal about Lincoln wanted to be like him. One day he received a penny too much in making change at the postoffice. His first impulse was to keep it, but when he thought of Lincoln he became ashamed and returned the penny.

In health instruction means should be taken to arouse emotions so that the children's desires may be awakened. Stories, plays, pictures, games and literature with emotional appeal should be available. A dry-as-dust textbook, while scientifically accurate, might result in distaste for the subject. Since too much emphasis through direct instruction may arouse antagonism, indirect instruction in connection with other subjects and with the daily activities of the school is recommended. The personal example of the teacher always has great influence.

3. *Train children in health habits.* All ideals should finally crystallize into habits. The evidence of the existence of an ideal is in changed behavior. However, in spite of the emphasis we are putting on health habits in our teaching such a procedure may fail in many instances. For example, a girl who had won many school health badges was one day seen drinking coffee. When surprise was expressed that she drank coffee after having won the badges, she replied: "Oh, that is all over now." In other words her desires had been aroused for only a short period of time. Her goal achieved, she drifted back to an old habit. As teachers we do not always realize that we may talk too much and drill too much so that our teaching results in antagonism or indifference toward the thing we are teaching. We must find new and interesting ways of teaching children the same thing, so that desires may be permanently maintained.

4. *Make the development of a health ideal satisfying.* Every individual has a system of values that controls his behavior. The athlete desires to be strong, skilful and to win social approval. He may have no interest in health but he responds readily to health instruction when he finds that it helps toward athletic success. A boy who was undersized for his age was sensitive about it. He could not be induced to drink milk. Suddenly, to the surprise of his parents, he began to call for milk in such quantities that they had to order another quart daily. The mother of one of his chums had told him incidentally one day that her boy had grown tall because he drank milk. Immediately the drinking of milk was associated with a strong desire.

## TEACHING HEALTH

*(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)*

### A THANKSGIVING EXHIBIT

THANKSGIVING! An excellent occasion for an exhibit in the interests of health education that will correlate history and nutrition, suggesting how intimately food was concerned in the first Thanksgiving and how dependent upon food is human welfare!

The health worker at the Boston Dispensary seeks to present this thought to the men, women and children who throng the out-patient clinics.

A colored crayon sketch in impressionistic style of Plymouth shore and headlands, with a vessel at anchor in the harbor, forms the background. A light from behind shines through the thin texture and makes the scene luminous. A Thanksgiving table below and in front of the sketch is set with snowy cloth and a candlestick at each side. As a central decoration of the table, history and nutrition are staged together. A pumpkin serves as a firm base for a Pilgrim family perched on top of it. Father, mother, responsible son and daughter and a toddler (3 and 5 inch dolls, dressed true to the period) stand there. Forming a wide circle about the group is a wreath of pine needle clusters and bayberry twigs with brown leaves adhering, while little heaps of cranberries, a crab apple or a wild apple dot the wreath at intervals.

At the back edge of the table, on each side, a miniature forest of foot-high pine trees serves to link foreground to background. A log cabin can be seen under the shelter of the trees, and in the very center of the back, directly under the ship anchored in the harbor, is a stone marked "1620." A few clusters of handsome ears of corn, saved from the summer garden, are tacked to the edges of the table.

An inscription overhead, in handwriting that is meant to suggest old English script, translates the thought:

"Thanks for vegetables and fruits,
and for the good health they
help to give us."

The details are simple and restrained, the effect is spacious, and the lighted candles shine on an exhibit that has an interest for every observer who comes to the outpatient department.

MARY PFAFFMANN,
Health Education Dept.,
Boston Dispensary,
25 Bennet St.,
Boston, Mass.

### EXPERIMENTS WITH ANIMALS

THE impressions in regard to diet and health that children receive from animal experiments conducted in the schools are so deep and lasting that great care should be exercised in planning them so that the ideas conveyed are correct. Unfortunately, the experiments that are being conducted in many schools are giving children erroneous ideas concerning the influence of ordinary foods on their health. The experiments are planned on the old idea that certain foods are harmful, rather than on the modern view that it is leaving certain foods out of the diet that is harmful. From such experiments the children gain the impression that certain foods such as sugar and candy, which are

wholesome when properly used, are detrimental to health.

The difficulty with most experiments is that an inadequate basal ration is used, two common ones being ordinary white bread, or corn meal and salt. Rats will not live on either of these diets because they do not contain all of the necessary food principles that are needed in an adequate diet. In many demonstrations one group of rats is fed this inadequate basal diet plus milk. This group grows quite well, as milk supplies the more essential elements which are missing in the basal ration. Other groups of rats are fed the same basal ration plus certain food substances which are commonly considered to be harmful to children's health. In such experiments one will usually find sugar, candy, soft drinks and coffee. As these substances do not have the elements that are lacking in the basal diet, the rats will not grow.

The children observing such demonstrations come to the conclusion that these substances must be harmful to health since the rats receiving them grow so slowly. This is an incorrect point of view. None of these substances, when incorporated in an adequate diet, interferes with the growth of rats; that is, if a diet is used which contains all of the necessary food elements needed for normal growth and development.

It is from experiments of this type that the erroneous idea has become prevalent that sugar is harmful to health. As a matter of fact, sugar is a wholesome food product. Cane sugar, or a less expensive form of carbohydrates such as corn syrup, is used by many of the best pediatricians for modifying milk in infant feeding. There is not the slightest experimental evidence to show that sugar has any harmful effect on normal individuals when used in reasonable amounts in an adequate diet. In fact, some of the foremost workers in the field of nutrition use cane sugar as a source of carbohydrate in their experimental diets.

White bread is another wholesome food product which many have come to think of as being detrimental to health. It has no detrimental action at all. If, however, it constitutes such a large portion of the diet that other food materials are crowded out, the health will be ruined by the lack of the necessary food elements. Such foods as sugar and white bread can be used in the diet so long as other food principles are taken along with them to insure the adequacy of the diet.

Ordinary cooking destroys vitamin C. The guinea-pig on the right developed scurvy in a few weeks after having been fed cooked fruits and vegetables, along with oatmeal and alfalfa leaves.

Feeding experiments such as those described give rise to many food fads. Some persons insist that certain food materials must be incorporated in their diet, while others must be left out. The entire point of view of such an experiment should be shifted from the harmful effect of certain foods to the importance of an adequate diet. No article of food, not even the much advocated milk or spinach, is necessary in an adequate diet. Neither is it necessary to leave any wholesome food such as sugar and white bread out of the diet. The thing to be emphasized is that there are certain substances which have to be in the diet for normal growth and development. Any combination of wholesome foods which contains these necessary substances will serve as an adequate diet for normal people.

The accompanying table sets forth in the first column the substances that have been found to be necessary in an adequate diet. The second column lists a few of the common foods that may be used as a source of these materials, and the last column shows the effect of leaving out these substances.

The important thing for children as well as adults to know is that definite disease conditions are sure to result if any one of these necessary foods is left out of the diet. With this point of view in mind experiments can be planned showing the children the harmful effects

*Adequate Diet*

| Substances Essential in an Adequate Diet | | Sources of Essential Substances | Effects of Lack of Essential Substances |
|---|---|---|---|
| Oxygen | | Air | Failure of the nerves to function—fainting |
| Water | | Water, milk, beverages, almost all foods | Thirst. Prevents function of body organs, especially the nerves |
| Proteins (amino-acids) | | Milk, meat, eggs, legumes, grain, etc. | Failure to grow. Loss of weight |
| Carbohydrates | | Starches, sugars, syrups, grains, tubers, fruits, milk | Lack of energy for work and growth |
| Fats | | Butter, lard, egg yolk, fat meat, vegetable oil, margarines, milk | Lack of energy for work and growth |
| Minerals | | Milk, outer coat of grains, green leaves, meats, mineral mixtures | Bones will not develop. Nervous disorders, digestive disturbances, goiter |
| Vitamins | A | Butter, egg yolk, milk, green leaves, yellow grains, yellow tubers, liver and liver oils | Sore eyes, nervous symptoms. Lowers resistance to colds and pneumonia |
| | *B | Outer coverings and germ of grains, yeast, tubers, milk, eggs, fruits, leaves, fresh meat | Failure of certain nerves to function. Digestive disturbances |
| | C | Fresh fruits, fresh leaves, fresh tubers, milk | Scurvy |
| | D | Cod liver oil, milk from cows receiving direct sunlight, eggs from hens receiving direct sunlight, substances irradiated with ultraviolet light. Ultraviolet light will cause development of this vitamin in animal body | Rickets, failure to utilize calcium and phosphorus of food resulting in disorders of nerve, muscle and bone. Predisposes to tuberculosis, especially the bone type |
| | E | Grains, especially wheat germ, liver, leaves | Sterility, paralysis in young |
| | *G | Whole grains, fresh meat, milk, eggs, vegetables | Pellagra |

* Some authors use $B_1$ and $B_2$ to designate the vitamins that are designated by B and G, respectively, in this table.

of leaving out certain essential substances. To do this an adequate diet is made up, and can be used for one group of experimental animals. Then by altering the diet in such a way as to eliminate a part of the protein, one or more of the minerals, or certain of the vitamins, children can be shown the effect of leaving each of the necessary elements out of the diet.

As an illustration of this method, the following experiment could be used to show the importance of vitamin C, and the way by which this vitamin is destroyed in cooking. For this work guinea-pigs must be employed as other experimental animals do not require this particular vitamin. To carry out the experiment two groups of guinea-pigs should be used. For the adequate diet group one could use oatmeal, dried alfalfa leaves, and a small amount of fresh vegetables or fruit. The second group would receive the same feed, oatmeal and alfalfa leaves, but would have their vegetables or fruit cooked. As the ordinary method of cooking destroys practically all of the vitamin C the guinea-pigs receiving this diet would develop typical scurvy in from three to five weeks. This would be shown by their failure to grow, and by their unthrifty appearance, as well as by their stiffened joints. This condition shows up in a peculiar gait, the animals usually hopping around on three legs. The accompanying picture shows this condition. Similar experiments could be planned to show the importance of each of the food elements.

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It was expected, of course, that the personality-behavior deviations of these pupils would indicate a decidedly impaired educational achievement. The many published accounts of problem children would indicate such a result. In many individual cases there is a definite relationship between the child's problems and his failure in school.

To the surprise of the investigators they concluded tentatively that "problem children show no general tendency to low educational achievement." They subjected their study to the most critical examination without changing their general conclusion. Other studies involving larger groups of children may modify these tentative conclusions. It is also true, as the authors have pointed out, that while personality and behavior difficulties may in some cases have little influence on school work they may seriously handicap the child in later adjustments to life. On the basis of such studies we may be obliged to modify some of our theories concerning mental health, but the need of training children in mental health is still one that demands our attention.

7. Pp. 326. Price, $3.50. W. W. Norton Co., New York, 1929.

8. The Hygiene of the School Child. By Lewis M. Terman and John C. Almack. Pp. 505. Houghton Mifflin Company, Boston, 1929.

9. Educational Achievement of Problem Children. By Richard H. Paynter and Phyllis Blanchard. Pp. 72. The Commonwealth Fund, New York, 1929.

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ONE of the exciting things in the development of science is the rejection of a fairly well accepted theory. Dr. Paynter and Dr. Blanchard made a study of problem children.[9] One group of 167 children were examined at the child guidance clinic of the National Committee for Mental Hygiene at Los Angeles in 1924. The other group of 163 children was studied at the child demonstration clinic at Philadelphia from 1925 to 1927. Those children having intelligence quotients below 80 were excluded from the study so that any variation in educational achievement might not be attributed to defective intelligence.

It was expected, of course, that the personality-behavior deviations of these pupils would indicate a decidedly impaired educational achievement. The many published accounts of problem children would indicate such a result. In many individual cases there is a definite relationship between the child's problems and his failure in school.

To the surprise of the investigators they concluded tentatively that "problem children show no general tendency to low educational achievement." They subjected their study to the most critical examination without changing their general conclusion. Other studies involving larger groups of children may modify these tentative conclusions. It is also true, as the authors have pointed out, that while personality and behavior difficulties may in some cases have little influence on school work they may seriously handicap the child in later adjustments to life. On the basis of such studies we may be obliged to modify some of our theories concerning mental health, but the need of training children in mental health is still one that demands our attention.

7. Pp. 326. Price, $3.50. W. W. Norton Co., New York, 1929.

8. The Hygiene of the School Child. By Lewis M. Terman and John C. Almack. Pp. 505. Houghton Mifflin Company, Boston, 1929.

9. Educational Achievement of Problem Children. By Richard H. Paynter and Phyllis Blanchard. Pp. 72. The Commonwealth Fund, New York, 1929.

# New Books *on* Health

*Reviewed by*
*Morris Fishbein, M.D.*

## THE ROAD TO HEALTH

By C.-E. A. Winslow, Dr.P.H. Pp. 151. Price, $2. The Macmillan Company, New York, 1929.

IN THIS book Prof. C.-E. A. Winslow of the Yale University School of Medicine presents three addresses given as the Jayne Foundation lectures for 1929. His first lecture reveals the struggle that man has waged against his environment since the beginning of time and the gradual conquest of the infectious diseases. The second chapter, entitled "Learning the Game of Life," shows how the discoveries of modern medical science may be applied in personal hygiene. The final lecture on "The Physician in the Modern State" is a serious consideration of changing points of view regarding the practice of medicine and methods of organization so that modern medicine may reach the vast majority of our people. The three lectures are well planned and constitute a fine memorial to the leader whose life they are meant to commemorate.

## EAT AND BE HAPPY

By Dr. Josiah Oldfield. Pp. 115. Price, $1.50. D. Appleton and Company, New York, 1929.

HERE is a book of aphorisms by an elderly practitioner who is convinced that most of the sorrow in life, as well as happiness, depends on diet and digestion. He is a vegetarian himself, but he does not believe that every one else ought to be. He probably assigns to food a much more important place than it really occupies in the human economy. He writes smartly and for this reason he is interesting even though one need not believe everything that is said. Through his years of experience he is inclined to believe that most human beings can tell what agrees and what disagrees with them, and he feels that one should have sense enough to avoid things that disagree too greatly.

## HOME CARE OF THE SICK

By Norma Selbert, R.N., B.S., M.A. Pp. 156. W. B. Saunders Company, Philadelphia, 1929.

A FEW years ago HYGEIA published a series of articles on the home care of the sick. The author of these articles has now gathered them together in book form adding other articles which were not included in the original series, with a view to providing the mother and the practical nurse with information that will be useful in taking care of a patient in the home.

The book may certainly be recommended strongly to any family in which there is an invalid. Observation of the instructions that it contains will mean much for the comfort and safety of the sick one. The chapters on personal care of the patient, prevention of bed sores and the daily routine are exceptionally practical. If there is any criticism to be made of the work, it is the overstocking of the family medicine chest, which is described in the chapter on that subject. The book is small, well indexed and in every sense of the word a useful and reliable guide.

## A BOOK FOR US DIABETICS

By Don H. Duffie, M.D. Price, $1.50. Pp. 120. Published by author, 1929.

THERE are numerous small hand books for the guidance of the diabetic who is attempting to take care of himself successfully. Dr. Duffie's book is the one most certainly written down to the education and intelligence of the average reader. He has availed himself freely of material developed by other writers and he does not hesitate to give credit fully for everything that is used. His book is a useful one.

## STERILIZATION FOR HUMAN BETTERMENT

By E. S. Gosney, B.S., LL.B., and Paul Popenoe, D.Sc. Pp. 202. Price, $2. The Macmillan Company, New York, 1929.

IN CALIFORNIA six thousand men and women have been made sterile by operation in order that they might not perpetuate their kind. Of the 6,255 sterilizations there were 601 more men than women. Of the feebleminded persons that have been sterilized, 1,488 in all, there were 330 more women than men. All feebleminded patients are sterilized before they are allowed to leave the state home for the feebleminded.

This book is a complete consideration of the laws governing sterilization, effect of these laws on those sterilized and the situation generally in California. The book is supplemented with chapters providing bibliographies, notes, statistics and a consideration of the legal and surgical aspects of the problem.

## WHAT EVERY ONE OUGHT TO KNOW

By Oliver T. Osborne, M.D. Pp. 313. Price, $2.50. Charles C. Thomas, Springfield, Ill., and Baltimore, Md., 1929.

BOOKS of advice for the public in matters of health are no longer a novelty in this country. Any new venture must bear comparison with dozens of others that have preceded it. In such a comparison the book by Osborne comes off well for many of its virtues but suffers equally for some lacks.

Dr. Osborne states his facts straightforwardly in simple language. He apparently takes it for granted that his readers will have some elementary knowledge of anatomy and physiology and he uses technical terms with a freedom that is hardly warranted by the actual extent of popular knowledge of these subjects. Certainly his book is not usable by those without college education and unless they have given special attention to physiology and hygiene it will be difficult for them.

The other major criticism of Dr. Osborne's book as one suitable for the public has to do with the exaltation of certain prejudicial opinions contrary to well established scientific fact. These opinions are no doubt a relic of the early moral hygiene and physiology that pervaded medicine and our schools twenty years ago. The sections of this work on tobacco and sugar reveal prejudices of this sort, whereas the sections on tea, coffee and alcohol represent more modern views. Dr. Osborne even indulges in a mild innuendo relative to the lack of morality displayed by the current feminine costume.

The unfavorable criticisms that are offered are not therefore especially serious in view of the fact that Dr. Osborne has long been known as a competent writer on medical treatment. The book is not a complete health guide, not an adequate text on personal hygiene, not a family health book. It is a collection of interesting essays on health subjects and is bound to be instructive to those who care to read it carefully and to those who can read it with understanding.

# Questions *and* Answers

*If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.*

### Lack of Concentration

*To the Editor:*—Often when people are talking to me, I find that my mind wanders to some other subject. This is embarrassing. Is it a habit or is it a sign of insanity? I am 37 years old and am very nervous.

G. S., Arizona.

*Answer.*—Ability to concentrate the mind and to hold one's attention for a considerable period on a single topic is one of the most important and desired mental accomplishments. It is true that the lack of ability to do this is often present in the insane, but it is also present in many other persons, so that one would certainly not say that it is necessarily a sign of insanity.

### Pasteurized Milk

*To the Editor:*—My baby is eight months old and weighs 23½ pounds. She has up until this time been given milk from the milk station conducted by the child welfare association in our city. As I intend to put her on whole milk in a month or so, I wish to ask you if the pasteurized milk sold by the Atlantic and Pacific stores is suitable for infant consumption.

J. F. O., Massachusetts.

*Answer.*—It is probable that the pasteurized milk obtained from any reliable source is safe, but we do not undertake to speak positively about any supply with which we are not thoroughly familiar.

The baby's weight is considerably in excess of that of an average infant at eight months. It might be well for the mother to have her physician advise her as to whether the child has not been overfed.

### Mineral Oils; Permanent Wave

*To the Editor:*—1. Is Nujol or any similar lubricating oil injurious if taken weekly? 2. Will a permanent wave harm the hair or scalp? M. S., Washington.

*Answer.*—1. The various preparations of mineral oil used to promote bowel movement are probably the least objectionable of any of the laxatives. To a certain degree, however, they gradually lose their effectiveness, and it is always better to secure regular bowel movement by proper diet, exercise, a reasonable amount of water and other liquids and, especially, by forming a regular habit of going to the stool at the same hour daily.

2. A permanent wave, as usually given, does not harm the hair or scalp. Injury may happen from careless or inexperienced operation of a permanent waving machine.

### Chiropractic Treatments for Blindness

*To the Editor:*—Recently a high school girl became suddenly and totally blind. She had a nervous breakdown four months earlier and was ill about a month. Since then she has worked extremely hard in school. The opinion of the local physicians is that there is nothing to be done; that rest is the only cure and that it is doubtful if that will cure. She is now taking chiropractic treatments and the chiropractor asserts that her spine is out of place. Is there a chance that these treatments will help her? Is it possible that rest is all that she needs?

J. E. S., South Dakota.

*Answer.*—Blindness may be due to serious organic changes in the eye or in the nervous structures having to do with vision, or it may be a purely nervous manifestation.

In a case such as the one mentioned, examination by physicians with large experience both in diseases of the eye and in nervous and mental conditions would be desirable. We suggest that the young woman ask her doctor to refer her in consultation to some specialist of this type.

We can think of nothing more futile (even dangerous) than so-called chiropractic adjustments in a case of this sort. Any one with a knowledge of scientific medicine knows positively that so-called adjustments of the vertebrae can in no way influence this condition for the better. If, as is possible, the trouble is an hysterical manifestation, using that term in the strictly medical sense, there may be a sudden recovery without treatment. If chiropractic treatment was being taken at the time this occurred, it would have had no part whatsoever in the cure, but would probably be heralded far and wide as a marvelous instance of chiropractic cure.

### Painful Menstruation

*To the Editor:*—A woman, 24 years old, has distressing pains at beginning of menstruation and dull aching in the lower part of the back for a day or more, especially when she is on her feet. She has been troubled this way for almost a year. Is this a normal condition or is there some relief from it? G. M., Indiana.

*Answer.*—When a woman has been free from menstrual pain for several years and begins all at once to have distressing pain at the beginning of menstruation, there is some reason for it that it should be possible to discover by careful examination. One who has had this experience should consult a competent physician and follow his advice.

### Treatment for Burns

*To the Editor:*—What is considered the best first aid treatment for the various types of burns? What is the best after-treatment so far as medicinal procedures are concerned? Is picric acid gauze considered useful in the treatment of burns and, if so, in the treatment of what type of burns is it especially valuable? We are eager to use only the most necessary medicines in our public schools. Children come into the health office from time to time because they have been burned in one way or another and we should like to know the best and simplest first aid treatment for these conditions.

M. B. H., New Jersey.

*Answer.*—Many surgeons feel that the tannic acid treatment of burns is the most important addition to this field that has been made for many years.

A freshly made solution of tannic acid, or tannin, from 2½ to 5 per cent strength, is applied to the burn with absorbent cotton or a soft cloth, or simply allowed to drip on the burn. This promptly coagulates the exudate which has formed, thus affording a protective covering that relieves the pain and prevents or lessens the absorption of the toxic matters that result from the tissue destruction.

Of course, a burn of any severity should be seen by a physician as soon as possible after it is sustained. It sometimes happens that under this filmlike covering pro-

duced by the tannic acid, suppuration takes place, in which case further treatment is necessary. This can be given only by a physician.

Tannic acid solution should be freshly made, but that can be done readily in any household by adding the dry acid to the proper amount of sterile water.

Picric acid gauze is very useful and operates in much the same way. While both of these tend to relieve the pain, in severe burns the pain is so great that anodynes may be necessary and, of course, these must always be given by a physician.

### Discoloration of Teeth from Smoking

*To the Editor:*—I find smoking causes the teeth to assume a permanent yellow tint. Is this in any way injurious and can it be overcome by a simple method? Which type of smoking is most apt to cause discoloration of the teeth—pipe, cigar or cigaret?

F. O. W., Nebraska.

*Answer.*—Smoking causes discoloration, but it is not injurious except for appearance. The cigar discolors more than the pipe or cigaret, because the tobacco in addition to the smoke comes in direct contact with the teeth. Frequent brushing with a good tooth powder or paste prevents discoloration to some extent.

### Study of Blood Cells

*To the Editor:*—After erythroblasts (nucleated red blood corpuscles) leave the liver and enter the blood stream, leaving their nuclei behind, what do the nuclei do while the red blood cells are in the blood stream? How can one obtain white blood cells if there is a deficiency?

M. C., California.

*Answer.*—It is generally stated that the nucleus is extruded from the erythroblast of the bone marrow before the erythrocyte enters the blood stream. The nucleus undergoes dissolution and disappears. One group of scientists, however, holds the view that the nucleus disintegrates within the red blood cell and that its material is retained in a disseminated condition. The liver forms red blood corpuscles only in the embryo or in anemia of the adult.

The number of white blood corpuscles can be increased as a reaction to bacterial infection. Experimentally a similar reaction is produced by injections of bacteria; for example, typhoid and colon bacilli which have been killed. Certain chemicals, notably those derived from nucleic acid, especially sodium nucleotide, when injected, produce a reaction that results in excessive production of leukocytes. These reactions, of course, presuppose that there has been no pathologic destruction or injury to the structures that are capable of forming white cells.

### Hives

*To the Editor:*—For the past ten months my daughter has been troubled with what has been diagnosed "hives." They spring up suddenly and continue swelling until within a short while the part affected is swollen to a great size. Redness and burning accompany them, and they are painful upon pressure. They appear mostly on the face, hands and feet, few appearing on other parts of the body. Those on the face attack the eyelids, mouth and tongue. The swellings last from two to three days. These appear at various intervals. What solution could you offer as to the cause of these so-called hives?

H. L. S., Maryland.

*Answer.*—The description given suggests that the condition is angioneurotic edema (giant urticaria). Nervous influences often are concerned in its development and continuance, associated perhaps with absorption of some toxic material of food origin (gastro-intestinal toxic infection). Anxiety, worry, menstrual derangements, thyroid overactivity are all to be considered as important factors influencing the state of the nervous system, and a careful investigation into the patient's general condition of health is essential. In some persons there is an hereditary tendency to the development of the disorder.

### Symptoms of Tuberculosis

*To the Editor:*—What is meant by a sealed case of tuberculosis? Can a person having a sealed case live in an altitude of 29 feet, if extreme care is taken in regard to food and rest? What are the symptoms of this disease in an active form at an early stage? Do patients having this disease in a dormant stage suffer from occasional night sweats and from nervousness? At what stage does the face become flushed?

R. L. D., Texas.

*Answer.*—What is spoken of in the letter as a "sealed case of tuberculosis" is probably a healed case. Either term might be used, however, because an acute tubercular process is arrested by the development of protecting cells which surround the focus of infection and wall it off from the rest of the lung, the gland or whatever organ or tissue is the site of the original focus.

Most human beings have been the subject at one time or another of a focus of this sort, usually without any manifestation of signs or symptoms. They go through life without any actual symptoms of the disease because it has been arrested by this process.

The inquirer speaks of an altitude of 29 feet. Is not this a slip of the pen? That would be a sea level altitude.

Flushing of the face may occur at almost any stage of the disease when the process is active.

### Ultraviolet Treatment in Tuberculosis

*To the Editor:*—Ultraviolet light treatments apparently have been beneficial in building up the system of a person with tuberculosis, as there has been a considerable increase in weight. A question has arisen in my mind whether or not they could be harmful to one who has bleeding from the lungs, sometimes severe attacks and at other times slight attacks. I have been told that in tuberculosis sanatoriums they are not used if the patients are subject to hemorrhages, supposedly due to the fact that the heat from these light treatments might increase the bleeding.

E. C. W., New York.

*Answer.*—Ultraviolet ray treatment and heliotherapy, or treatment by the direct rays of the sun, are inadvisable in tuberculosis patients who show a tendency to bleeding from the lung. In addition to the tendency to bleeding, there are other conditions that render treatment by ultraviolet light or sunshine inadvisable or dangerous.

Persons of the blond type, suffering with tuberculosis, should be guarded in the matter of sun treatment. Even healthy blond persons are frequently unfavorably affected by exposure to sunshine. The unfavorable reaction is, of course, more marked in those affected with tuberculosis. Consequently, it behooves such persons to employ heliotherapy with the greatest caution.

Pulmonary tuberculosis of a toxemic type is frequently unfavorably affected by heliotherapy. Heliotherapy should be abandoned if an elevation of the temperature or increase of pulse rate occurs that can be attributed to the exposure.

The decision as to whether heliotherapy should be used should not rest on the personal judgment of the patient. The person affected with tuberculosis should place himself in the hands of a competent physician. The physician will, in the first place, determine whether heliotherapy is advisable and, in the second place, will decide as to the amount and method of gradation of the dosage.

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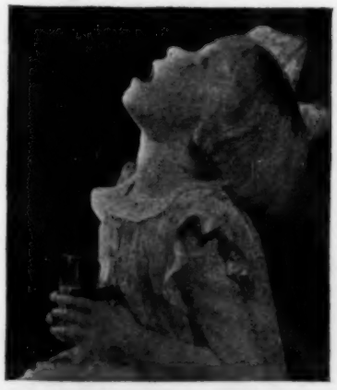

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The majority of deaths from diphtheria are of little children less than five years old. If your child, so far unprotected, has not been stricken by this arch-enemy of childhood, your good fortune is a matter of luck—not precaution. If he is more than six months old, take him to your doctor without delay and have him inoculated.

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***Prevention*** **of diphtheria through inoculation with toxin-antitoxin should not be confused with *treatment* of the disease by means of anti-toxin. The latter is a cure—the former prevents.**

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## Myopia

*To the Editor:*—I am a girl of 21, of German parentage, and was recently graduated from college. I have a high degree of hereditary myopia, which I am told is a racial as well as a family trait. My mother is very nearsighted, as are my three sisters and several of my aunts and uncles on the maternal side. I enjoy good health and have never been seriously troubled with eyestrain, but as I have a somewhat higher degree of myopia than any other member of the family, and as it is still increasing, it causes me considerable worry. When I entered college four years ago, the family oculist fitted me with minus ten lenses, which were slightly less than a full correction at that time. He advised me to avoid a stronger correction as long as possible, stating that in such cases it was advisable to wear an undercorrection, especially for close work. Accordingly, although these glasses soon proved to be too weak, I continued wearing them until a few days ago, when I had an examination made by a different specialist. He expressed great surprise that I had endured such badly blurred vision for nearly four years and advised me that I should be wearing at least minus twelve lenses. He advised me to wear a full correction for distance and an under-correction for close work only, in case the full correction proved uncomfortable. I find the minus twelves wonderful for occasional distance use, such as movies, but almost unendurable for constant wear. I should appreciate advice in this matter. Also, as I plan to marry soon, I should like to know if there is any way in which I can prevent my children from being myopic, or at least keep it down to a moderate degree. F. B., Oklahoma.

*Answer.*—Some of the best brains of the ophthalmic world are at work on this most perplexing question of hereditary and advancing myopia, but the solution of the question is not yet at hand. In the first place, correction of a myopia of this degree should be ordered only after a most painstaking refraction under complete cycloplegia (dilatation of the pupil with temporary paralysis of the ciliary muscle). In the second place, the glasses should be the weakest lens that will give full vision for distance and they should be worn continuously, both for distance and for near work. The discomfort complained of during reading will disappear as the eyes become accustomed to the proper strength of lens.

The question of prevention of myopia in the offspring is more difficult of solution. Undoubtedly

heredity plays the greatest rôle in myopia, but lack of proper correction, too much close use of the eyes, and insufficient outdoor exercise have their influence. Posture in school and when reading is a still disputed influence. With the history of an hereditary myopia, it is suggested that the children be limited in the amount of close use of the eyes, particularly in reading for pleasure. The distance vision of the children should be tested as soon as practicable and careful watch be maintained for the first appearance of myopia, at which correction under cycloplegia should be made.

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### Children's Diet Problems

*To the Editor:*—1. Does freezing my little girl's orange juice in my electric refrigerator destroy any of the vitamins that it contains? Will the aluminum trays in which I freeze it affect it? 2. On account of extreme constipation my doctor has instructed me to discontinue giving sweet milk to my twin girls, 6 years old, substituting instead a quart of buttermilk each daily. Will the buttermilk give them the vitamins they should get from the sweet milk? If not, how can we make up for it? 3. My little girls eat celery, lettuce, and other foods much more readily if given a liberal allowance of salt. Will they be likely to get enough to harm them?

C. N. R., Pennsylvania.

*Answer.*—1. The effect of freezing on vitamins in various foods is one that has not been fully studied. It is probable, however, that freezing does not impair materially the vitamin activity, provided the orange juice or other food material is eaten while it is frozen or shortly afterward. Most foods deteriorate more rapidly after freezing, and therefore orange juice which had been frozen should not be used if it has stood very long after melting. Cannot the child be trained to drink orange juice that is merely chilled, not frozen?

There is no evidence that aluminum trays would have a bad effect on the food.

2. Buttermilk contains a decidedly less amount of vitamin A than does fresh milk. It contains about the same amount of vitamin B and a considerably less amount of vitamin C, which is the one that prevents scurvy. If butter does not disturb the children in any way, the buttermilk might be supplemented by the liberal use of butter. Of course, the doctor should decide whether that is advisable.

3. A reasonable amount of salt is not objectionable but it is well not to encourage its too liberal use.


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### Sunshine and Fresh Air

*To the Editor:*—People tell me I am foolish to pay more for a sunny room, when I am almost never in it when the sun shines. I work in an office that has no sunshine. Is a room more healthful on a winter evening if the sun has been shining into it through a closed window half a day? Is it on a summer evening, if the sun shone through an open window? Do not curtains, even thin ones, which cover a window entirely, shut out some of the value of the sunshine? Are air baths good for adults, and if so why? R. C., Illinois.

*Answer.*—It is an advantage to have a room in which the sun shines a good part of the day, even if one is not occupying it during the day. As to curtains, it depends entirely on their character. Reflected sunlight is better than no sunlight.

The contact of air with the skin of the whole body is agreeable to many persons and certainly not harmful, provided one does not get chilled.

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### Diet in Neuritis

*To the Editor:*—What is a good diet for a person suffering with neuralgia or neuritis? A. W., Texas.

*Answer.*—Diet in neuritis and neuralgia depends entirely on the cause of the disorder. Among the frequent causes are anemia, gout, lithemia, rheumatism, diabetes, alcoholism or focal infection of some part of the body. Tea and coffee should usually be prohibited in chronic neuralgia. On the other hand, in migraine and other similar troubles which are forms of neuralgia, coffee may even relieve the attack.

Some have thought that a vegetarian diet might be the cause of neuralgia and advise therefore the use of meat. On the other hand, in cases of gout, meat often aggravates the condition. As a general rule, plain wholesome food should be ordered which will not upset the system when taken at regular intervals. The patient should not be allowed to eat between meals. All complex and highly seasoned foods should be avoided, as also should fried foods, butter and anything known to disagree with the patient. Care should be taken, however, that the diet should not be too restricted and that the patient does not imagine that certain foods upset him when they really do not do so. Excessive use of tobacco has sometimes caused neuritis.

A suitable diet cannot be prescribed except on the basis of a careful personal examination.

# The importance of Healthful Cleanliness in Good Cooking cannot be over-emphasized

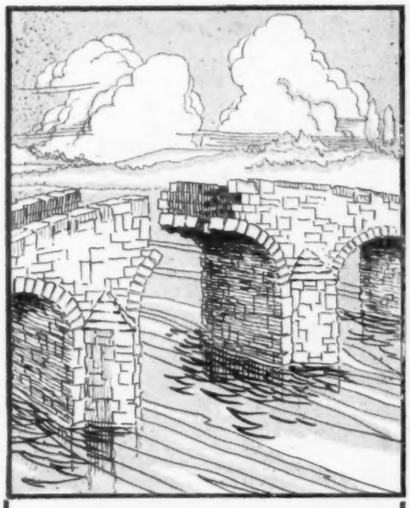
HEALTHFUL CLEANLINESS is the first requisite in the preparation of palatable and wholesome foods—and there is nothing else like Old Dutch to provide this protection. It is safe...quick...economical.

SAFE: Because it is free from acid and caustic, contains no sand or hard scratchy grit. It doesn't scratch. Scratches make utensils unsightly. They also provide lodging places for impurities, cause food to stick more readily and often scorch and burn; they render cleaning more difficult—Old Dutch doesn't harm the hands.

QUICK: Because of their remarkable detergent properties and ultra-modern efficiency, the soft, flaky, flat-shaped Old Dutch particles wipe away stubborn dirt, grease, grime, stains and rust with a clean sweep. When you use Old Dutch, less work, time and energy are required because Old Dutch does so much more. You'll appreciate this especially at the holiday season...when there is so much to be done...cooking, baking, candy making and so many **extra** utensils to be cleaned.

ECONOMICAL: Because **every particle** of Old Dutch does its **full share** of cleaning. The Old Dutch particles are flat-shaped, they lie flat on the surface and do not rake it with hard sharp points, like grit.

USE OLD DUTCH for cleaning cooking utensils of every description. Old Dutch removes all impurities, the visible and the dangerous invisible. It banishes all taint, all odor, assuring a healthfully clean utensil, which is an important factor in good cooking that cannot be overemphasized.



## The Missing Arch

What good is a bridge if an arch is missing? What definite benefits can you expect from reinforcing the diet with some of the vitamins if you neglect to reinforce it with that vitamin, the lack of which may be the actual cause of the trouble?

Many authorities state that the vitamin most frequently missing from the average American dietary is "B". Lack of this vitamin predisposes to a wide variety of prevalent minor troubles leading, in some instances, to more serious disorders.

Discussing "The Relation of the Quantity of Vitamin B to the Quantity of Food," it was stated in "Proc. Roy. Soc. Med.," 1921-25, April, 1926:

"From these data it may be concluded that the ordinary daily diet in this country does not contain enough vitamin B and the ordinary minor troubles of the population, such as constipation and gastro-intestinal troubles which correspond with shortage of vitamin B, arise."

Fortunately, it is simplicity itself to reinforce the diet with the desired amount of the vitamin B complex,* for the richest known source of this essential food factor is to be found in Vegex —a concentrate of brewers' yeast.

There are many appealing and appetizing ways of taking Vegex. It adds a delicious flavor to soups and gravies, may be taken as a bouillon or added to meats and vegetables.

Let us send a jar to your home, so that it may be served upon your own table.

*$B_1$—Antineuritic Factor. $B_2$—PP Factor.

VEGEX

*Richest known food in Vitamin B*

VEGEX, INC. Dept. H-11
34 Ericsson Place, New York City, N. Y.

Gentlemen: Please send me, without charge, sample of Vegex, with complete information and book of recipes.

Name.....

Address.....


## MALARIA REMAINS CANAL ZONE PROBLEM

Yellow fever has been wiped out of the Panama Canal Zone, but malaria still prevails widely and at present offers a more difficult and expensive problem to the sanitarian, according to the recent report of the chief health officer of the Panama Canal.

Malaria prevention efforts are confined to the more important towns and their environs. Permanent drainage works have gradually been installed and these have made certain controlled areas safe, but there remains the greater part of the territory that is not protected.

Dr. Weston P. Chamberlain, health officer of Panama, lists as follows the difficulties of malaria control in that tropical region:

First, the anopheles mosquitoes concerned are rural breeders, developing in swamps, brooks, ponds or puddles over great areas and then flying considerable distances (a mile or more) to obtain the blood meal necessary for the propagation of the species.

Second, a large part of the indigenous population of the Isthmus living outside the sanitated towns is infected with chronic latent malaria, thereby affording opportunity for newly hatched mosquitoes to acquire the infection by biting them.

Third, even when vigorously treated those who contract malaria may remain infective for lengthy periods, in contrast to the brief three days of infectivity of the yellow fever patient.

Fourth, one attack of malaria confers no immunity to later ones.

Fifth, there is an insistent desire among many persons to leave the sanitated areas at night for picnics or other purposes.

It is the last named habit that brings many cases of malaria into the towns, Dr. Chamberlain says. The increasing number of automobiles and the rapid extension of hard-surfaced highways into the interior are bound to augment this danger each year, he concludes.

---

There is not the slightest scientific basis for the belief that any of our sarsaparilla syrups have any influence whatever upon the composition of the blood. True, the tissues of the body, including the blood, do contain minute quantities of sulphur and iron . . . but these elements are appropriated from the foods that contain them. The popular belief that there is necessity for some form of "spring tonic" is not borne out by scientific investigation.


INVALUABLE AID *In Relieving Pain*

## The "OVR-NITE" HEATING PAD

(*Reg. U. S. Patent Office*)

**Prepared with one ounce of hot water. Stays hot 15 hours**

Its soothing heat quickly reaches the spot and relieves the pain.

The "OVR-NITE" Heating Pad is invaluable in relieving pain in Neuralgia, Neuritis, Ordinary Toothaches, Menstruation and other conditions where heat is required.

Ready for use almost immediately on addition of the water. Retains a temperature of 170 to 175 degrees for fourteen hours.

It is soft and pliable and can be comfortably applied to any part of the body.

**There is no possibility of leakage with the "OVR-NITE" Heating Pad. It stands the test of usage and age. 135 hours' heat guaranteed. Pad with washable rubberized cloth cover, $1.00, sent prepaid on receipt of remittance. Additional pads without rubber cover, 60c, sent prepaid.**

## HUNTERS Keep Your Hands Warm

We make a pocket size pad (also $1.00) that will add untold comfort to your outings. A few of these pads with your duffel will insure warm hands for the season.

**THE BAG-O-HEAT CO., Not Inc.**
*Sole Manufacturers*
**201 Traders Bldg., 309 S. LaSalle Street, CHICAGO**

## STOP Thumb-Sucking JUBILEE BABY ARMLET

*Aluminum—Adjustable*

**$1.00 Pair**

**Also corrects Nail-Biting**

A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movement, even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.

**JUBILEE MFG. CO., 21 Sta. C., Omaha, Neb.**

## SAVO AIR MOISTENER

**Saves Furniture, Pianos, Paintings, Plants, and Makes Air More Healthful**

Fill with water, hang on back of any Radiator out of sight. Others for all types of Hot Air Registers and Pipeless Furnaces. Ideal for Homes, Offices, Schools, Hospitals, etc. Six sizes. Write for FREE Booklet.

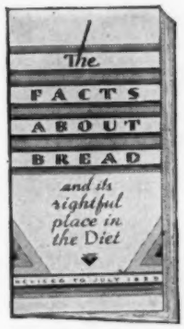
**SAVO MANUFACTURING CO.**
**Dept. X-11, 111 W. Monroe St., Chicago, Ill.**

# Digestible

TESTS by the United States Department of Agriculture covering a ten year period prove that the proteins and carbohydrates of bread made from white flour are more completely digested and absorbed by the body than those of the bread made from either whole wheat or graham flour.

The digestibility of white bread, added to its palatability and its low cost per unit of energy, makes it the foundation of a balanced diet, which should also contain other cereal foods, fruits, vegetables, meat and fish, dairy and poultry products.

Bread is a valuable component of our daily diet. White bread furnishes the human body with carbohydrates that create heat and energy; made with milk it furnishes the very necessary calcium for bone and teeth development, and with yeast contributes to the Vitamin B requirement for preventing some of the deficiency diseases. White bread is one of our most digestible foods, its valuable nutritional contents being easily assimilated by the body.




*Send for*

**"FACTS ABOUT BREAD"**

As one of the key people who direct the food habits of the nation, you are interested in knowing all "The Facts About Bread and Its Rightful Place in the Diet." Under this title we have published a book of authentic statements by eminent physicians, scientists and educators. We will be glad to send you without charge a copy of this booklet.

KNOW *the* FACTS *about* BREAD

COUPON

Dept. H–5119
Washburn Crosby Company,
Minneapolis, Minn.

Please send me, without charge, a copy of "The Facts About Bread and Its Rightful Place in the Diet."

Name.....

Address.....

City.....State.....

*The above statement has been submitted to and approved by a group of disinterested and competent investigators in the field of nutrition, selected by the editor of The Journal of the American Medical Association. These investigators include Professors Graham Lusk, E. V. McCollum and Lafayette B. Mendel.*

{ For complete information on nutrition see books written by these authorities }

**BREAD *IS* THE STAFF *of* LIFE**

Copyright, General Mills, Inc., 1929.

This advertisement and the booklet "The Facts About Bread and Its Rightful Place in the Diet" are published by Washburn Crosby Company, millers of Gold Medal Flour, to assist in the broadcasting of authoritative information about bread.

**Relaxation Without Eye-Strain—A New Delight for All Who Read—A Lifelong Investment in Convenience**

**Ease and Relaxation Never Felt Before**

If you like to read, here is a convenience you have long been looking for. Now you can sit back in your favorite chair, adjust the Mitchell Lap Table at precisely the proper angle and read in solid comfort! No eye-strain. No tedious holding of the book or magazine. Your body muscles are at rest; your energies concentrated on the message before you. One of life's most pleasant recreations is made even more pleasant!

Write or draw in your favorite easy chair.

**Dozens of Uses**

The Mitchell Table enables you to read or breakfast comfortably in bed; to write, figure or draw in your coziest chair. A blessing to invalids; an appreciated convenience on vacation, in traveling and at outings; a distinctive and useful gift.

Read or breakfast in bed comfortably.

*Are There Children in the Home?* If so, *insist* that they use a Mitchell Table. Humping over books and studies often leads to serious disorders. The Mitchell Table encourages them to sit, read and breathe properly.

**Endorsed by Hundreds**

"I've always wanted something of the kind but did not know it was on the market."—Mrs. E. H. Blanchard, St. Louis.

An investment in health where there are children.

*Lasts a Lifetime.* Special laminated wood, attractively finished in walnut or mahogany. Nothing to wear or get out of order. Adjusted by two simple thumb nuts. Folds to 1⅞ in. thickness.

*Five Days' Trial—Send No Money.* Simply return the coupon. Pay the postman $6.50 on delivery. Enjoy the comfort of easy reading—in bed or your easy chair. Note the dozens of uses. See the healthful effect on children. If not delighted in five days, return the table and your money will be refunded in full; otherwise it is yours for a lifetime of service!

Substantially made, beautifully finished. Felt bottom prevents slipping. Price includes detachable metal supports for bed use.

5 DAYS' TRIAL

**Mitchell Moulding Co., Dept. 911, Forest Park, Ill.**

Send me postpaid, a Mitchell Table ☐ Mahogany ☐ Walnut Finish. If in five days I am not entirely satisfied I may return the table and my money will be promptly refunded in full. ☐ I enclose $6.50 in full payment. ☐ I will pay postman $6.50 on delivery.

Name.....

Street Address.....

City..... State.....


## TO HELP WORKERS CHECK THEIR HEALTH

Minor health troubles frequently loom large as cause of inefficiency and lost time in business. To encourage its employees to watch for seemingly unimportant causes of distress the Western Electric Company issued a chart containing the following questions as a feature of its annual health week:

1. How do I ventilate my working quarters?
2. What is the normal temperature of my working quarters?
3. How do I compensate for changes of temperature between outdoors and indoors?
4. How do I ventilate my home?
5. Have I a thermometer in my living quarters to regulate the temperature?
6. Have I sufficient changes of clothing for day to day changes in temperature?
7. Have I sufficient rainy weather equipment?
8. Are my shoes comfortable and do they protect my feet?
9. Does my toothbrush need renewal?
10. Have I dental floss?
11. Does my hairbrush need renewal?
12. Have I the proper equipment for the emergency treatment of illness?
13. In what ways can I improve my resistance to colds or respiratory disorders?

## DEFINES DEGREES OF DEAFNESS

Most persons whose hearing is defective are sensitive about being called "deaf." Gradually therefore the term "hard of hearing" has been accepted as applying to those who can hear, but who have difficulty. Still a third term is "deafened" which is applied to those who have lost their hearing entirely.

To clarify these three terms, E. A. Myers in the *Volta Review*, proposes certain distinctions, as follows:

"Hard of hearing" applies to those who have defective hearing but have usable residual hearing with or without an instrument.

"Deafened" applies to those who have had good hearing, but have lost it after acquiring speech.

"Deaf" applies to persons who are congenitally deaf, with no usable hearing.

The classification is important, says Mr. Myers, because the hard of hearing must be treated differently from the deaf or the deafened. The class to which a person belongs must be determined before relief can be given.


# Mother *protect your baby*

**from loose pins and buttons**

*The Vanta Baby Copyright 1926 Earnshaw Knitting Co.*

For sake of safety, comfort, convenience, health, dress him FOR THE FIRST TWO YEARS, in the way recommended by doctors, nurses, millions of mothers—in

## Vanta Baby Garments

**No Pins No Buttons**

***Safety***—because there are no pins to come unfastened or buttons to turn edgewise and torment little bodies. Your baby can never put a pin or button in his mouth. They keep baby safe from harm.

***Comfort***—because they tie just right with dainty bows of twistless tape—neither too tight nor too loose. Adjustable as baby grows.

***Convenience***—because they dress baby without turning and twisting that makes him so tired and cross.

***Health***—because doctors recommend their perfect protection of little bodies in all kinds of weather.

VEST

***Quality***—only the best—for your baby. Guaranteed non-shrinkable. Stores will make adjustment if any Vanta garment is not satisfactory.

In cotton, wool, silk, linen mesh, sase and rayon; in light or heavy weights as your doctor prescribes. Sizes to six years.

ABDOMINAL BAND

Ask for Vanta Baby garments at your store. If you cannot get them write to EARNSHAW SALES CO., INC., Dept. 1201, Newton, Mass.

***FREE TO YOU***

**Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.**

Earnshaw Sales Co., Inc.,
Dept. 1201, Newton, Mass.

Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

Name.....

Address.....

City..... State.....

## WHEN A CHILD REFUSES TO EAT

When a baby or a child does not eat, the trouble may be real or it may exist only in the minds of worried parents. If he is getting enough food, there is no cause for anxiety even though the amount is less than what the parent or nurse thinks he ought to have, says Dr. Joseph Garland, a child specialist.

Dr. Garland discussed at the New England Health Institute the real reasons for failure of appetite in a child, which he outlined as follows:

A. Physical, or mechanical.
- Too frequent feeding, breast or bottle.
- Irregular feedings and food, especially improper food, between meals.
- Improper food, especially food rich in fat or too great in amount.
- Too fast or too slowly flowing nipples.
- Improper temperature of bottle.
- Occasionally prolonged tube feedings.
- Poor hygiene (insufficient fresh air, sunlight or rest; overclothing).
- Fatigue.

B. Psychic.
- Artificial feeding started too soon after birth, to prevent initial loss of weight.
- Forced feedings.
- Overstimulation of the nervous system with resultant loss of appetite and perhaps vomiting and diarrhea.
- New and unaccustomed foods.
- Weaning.
- "Normal," or physiologic, loss of appetite.
- Improper training and discipline.

---

## ZEPPELIN CONTRIBUTES TO CANCER RESEARCH

When the Graf Zeppelin made its sensational trip from Germany to the United States it carried valuable cultures of cancer cells that are expected to be of great importance in cancer research at the University of Pennsylvania's cancer research laboratory.

The cells were from a type of cancer peculiar to rats and not of the human type, but the cultures are to be used in the study of cell division, which is the fundamental feature of cancer in human beings. These cultures must be transplanted every few days and since it is almost impossible to carry the necessary apparatus on a steamship, the quick trip of the airship offered the best possible method of getting them to America in proper condition.

*Headquarters of Commander Byrd's Expedition in "Little America," where the party will spend the Antarctic winter.*

*Photo copyright 1929 by the New York Times Co. and the St. Louis Post-Dispatch.*

*Above photograph presented to Mr. Frank L. H. Nason by Commander Byrd.*


# Nason's

Palatable-Norwegian

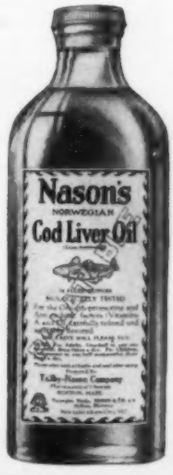
# Cod Liver Oil

***The Better-Tasting Kind***

## now in the Antarctic *with* Commander Byrd

Nason's palatable cod liver oil complies with the U. S. P. standard for cod liver oil. In addition, it is required to have a content of fat soluble vitamin A, determined by the U. S. P. method, of not less than 800 units per gram, and an antirachitic potency such that 0.01 Gm. per day will produce definite healing (as determined by x-ray photographs), in the leg bones of rachitic rats in eight days when added to a diet lacking in vitamin D, the rats being also deprived of ultraviolet light.

***Send Coupon for Sample***




**Of high vitamin potency**

**TAILBY-NASON COMPANY**
Kendall Square Station, Boston, Mass.
*Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.*

Gentlemen:—You may send me (without charge) sample bottle of Nason's Palatable Cod Liver Oil.

Name .....

Address .....

My druggist's name.....(H.11-29)

**AVOID DANGER**
***OF UNSUPPORTED BUST***

U. S. Pat. 1,702,922—Invented by Mme. Poix to Relieve Pain and Remove Cause of Serious Bust Troubles

**Obtain the Upward Converging Contour and Support that Doctors are Urging**

*Sizes 30 to 44*

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| 373 Pink Batiste | $1.00 |
| 279 Pink Repp | 1.50 |
| 284 Pink Tussah Silk | 1.50 |
| 285 Pink Mesh | 2.00 |
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| 356 Lace—Net Lined | 3.50 |

EXTRA SIZE MODEL
(Wider from Top to Bottom)
*Sizes 36 to 52*

| | |
|---|---|
| 279X Pink Repp | $2.00 |
| 366 Mesh and Brocade | 3.00 |
| 418 Silk Jersey | 5.00 |

**On Sale at Leading Department Stores and Corset Shops**

If your dealer does not carry it, write us direct. We will also send our remarkable new free booklet.
Approved by New York Maternity Center.

*The* TRADE MARK **A.P.-UPLIFT**
U. S. PAT. 1,702,922

**G. M. Poix, Inc., 103 Madison Ave. New York, N. Y.**



BREAK the THUMB-SUCKING HABIT

End this habit and prevent protruding teeth, facial deformities and other harmful effects.

Dr. Thompson's Sanitary Rings permit perfectly normal use of thumb or finger. Free brochure explaining evils of habit. Enclose $4.50 for two Sanitary Rings, plus 15c postage. State age of child.

**CHILD WELFARE DEPARTMENT**
1814 H. Medical Arts Building, Chicago, Ill.

Representatives for Hygeia are wanted in every community. Generous commission. Send for full details.


## TO TEACH WORKING MEN TO PROTECT EYES

From a small committee formed twenty years ago in New York state to cut down the number of babies' sore eyes at birth has grown the National Society for the Prevention of Blindness engaged in fighting blindness or impairment of vision of any sort and at every age of life.

During the past year the activities of the society extended beyond the borders of the United States with the beginning of an international survey of prevention of blindness in connection with the League of Red Cross Societies, according to the report of the society for 1928.

A second important project begun in 1928 was a cooperative campaign in association with the American Federation of Labor to educate 5,000,000 working men and women and their families in methods of preventing blindness. This campaign has to do principally with the use of safety devices in industry. An investigation showed that in 583 industrial plants employing more than 578,000 persons, 2,757 were saved from blindness or injury in both eyes and 4,654 were saved from serious injury or total blindness in one eye.

Sight saving classes are a recent project of the society which showed growth during 1928, the report shows. There are now 318 such special classes in the United States. The society estimates, however, that 5,000 are needed.

---

## SHOW HOW DINGY PAINT ABSORBS LIGHT

That dingy paint on walls absorbs half the light in a room, especially in factories, so that electric light must be used for longer hours and in greater intensity, is convincingly shown by an exhibit recently installed in an industrial museum in London.

The exhibit consists of a box fitted to resemble a room in a factory. By turning a lever, paper of a continually darker shade of gray is rolled over the inside walls of the model to simulate what happens as the painted walls of a factory gradually become darker with dust. The amount of light remains constant, but it is easily seen that the light on workers' benches and tools is decreased by half as the walls are darkened.

---

To combat consumption as a disease of the masses requires the combined action of a wise government, well-trained physicians, and an intelligent people.—*Knopf.*


**For those who "should eat bran"**

This new, delicious Pettijohn's contains but conceals the roughage you need

DULL headaches, irritability, intestinal auto intoxication. Are you one of the army who suffer from "the great, unnecessary handicap"?

Perhaps you've believed, as so many have, that bran, to be effective, must be crude. The bran of New Pettijohn's is *doubly* efficient because it is *not separated* from the rest of the wheat berry. For with it you get the vital part of the wheat which always increases the effectiveness of bran. You get deliciously softened bran with no sharp edges to irritate

the tenderest digestive tract. You get *whole* bran in *whole* wheat, just as nature intended you to have it.

Since Pettijohn's is the whole grain, you have, too, the vitamins "A," "B" and "E" to protect health, Rich, whole wheat proteins to build muscle and tissues. And the precious minerals, iron, lime and phosphorus.

And this is but half of the story. More important than all is the fact that Pettijohn's is so temptingly delicious that people everywhere love to eat it,

Here's the health breakfast for you, then. A steaming, flavory, dish of golden whole wheat flakes. And Pettijohn's is made to cook in "toast and coffee time."

Buy a box of Pettijohn's today for breakfast tomorrow. Prove to yourself how appetizing bran can be, if it's served as nature made it, whole bran in whole wheat.

14

**Pettijohn's**

*For those who believe in "whole grain nutrition"*

There are many new Pettijohn recipes, waiting for you at the Quaker Oats Company in a booklet called "The Truth About Bran." Address The Quaker Oats Company, Chicago, for your free copy.

## CHINESE DOCTORS FIGHT PLAGUE

Newspapers heralded each move in the recent political disturbance between Russia and China, but the general public heard nothing of an equally significant battle just a year ago in the same territory that has been the scene of the military struggle.

Plague broke out in northern China. When Dr. Wu Lien-Teh of the Manchurian Plague Prevention Service reached the plague center, the epidemic had already gone unchecked for two weeks. He found the sick unattended and the dead lying unburied in the fields. The doctors' task was complicated by the prejudice of the natives against them. Certain monkey-shaped dolls made of blue cloth were considered more efficacious than modern methods of medical science.

For three months Dr. Wu and his colleagues battled against disease and ignorance till they brought the epidemic under control. Though research was carried on under the most difficult conditions the efforts were amply repaid by the knowledge gained, according to the story as retold in *The Journal* of the American Medical Association. Some new rodents have been proved susceptible, some new species of fleas discovered. The outbreak also demonstrated that plague is not a local affair centered in Manchuria, but is entrenched in China proper and must be fought on a wide front, leading from the Russian border southward into Shansi province.

---

## MAY SERVE HOT LUNCHES WITH SIMPLE EQUIPMENT

Hot lunches for school children do not depend necessarily on thoroughly equipped and perfectly functioning home economics departments, the health department of Tennessee points out. It is remarkable what an ingenious, energetic teacher can do in the one-room rural school with a pot, a tablespoon, a pinch of salt and some water. Many teachers prepare nourishing soups, hot chocolate, beans and other uncomplicated hot dishes on top of the heating stove with gratifying results.

A plate of hot soup on the inside of a school boy makes a new person out of him for the rest of the day, the bulletin remarks. He is more alert mentally, less restless physically and is more easily controlled. The cost need not be excessive, since many children can bring from home the simple ingredients necessary for the hot dish.

# Identical...

*yet only one is safe to use*

THESE two cups are exactly alike ... to the naked eye. But what a difference the microscope might reveal!

One has been washed really clean. No germs to endanger health!

The other has been washed too ... but *not* washed really clean with suds and boiling water. It may contain invisible microscopic organisms capable of spreading communicable disease.

Thorough dishwashing, and thorough rinsing in water, boiling hot, are essential protective measures which should be understood and practiced in every home. Health workers can help to see that they *are* understood and practiced.

Cleanliness Institute provides material on this subject and on other subjects regarding cleanliness in its relationship to human welfare. Health workers are finding this material helpful in educating people. Why not send for it?

CLEANLINESS INSTITUTE

*Established to promote public welfare by teaching the value of cleanliness*

45 EAST 17th ST., NEW YORK, N. Y.

Nonspi
AN ANTISEPTIC LIQUID

Keeps Your Armpits Dry and Odorless

NO man or woman should permit armpit perspiration with its disagreeable, offensive odor and ruinous, discoloring stains to embarrass them personally nor destroy their clothing.

You can rid yourself of armpit perspiration. A few drops of NONSPI (an antiseptic liquid) applied to the underarms will keep them dry, odorless and sweet and protect your clothing.

*NONSPI destroys the odor and diverts the underarm perspiration to parts of the body where there is better evaporation—and need be used on an average of but two nights each week.*

NONSPI is an old, tried and proven, dependable preparation—used, endorsed and recommended by physicians and nurses.

More than a million men and women use NONSPI the year around—spring, summer, fall, and winter—to keep their armpits dry and odorless and protect their clothing.

Get a bottle of NONSPI today. Use it tonight. Your Toilet Goods Dealer and Druggist has it at 50c (several months' supply) or if you prefer

FREE TESTING SAMPLE SENT ON REQUEST

THE NONSPI COMPANY
2673 Walnut Street
Kansas City, Missouri

*Send free NONSPI sample to*

NAME_____

STREET_____

CITY_____

TRADE NONSPI MARK

## TRAINING TEACHERS TO TEACH HEALTH

Next to the home the school is the logical place for health education and if the parents are not equipped to teach health behavior, the school's obligation is imperative, declares Dr. Iago Galdston, secretary of the health education service of the New York Tuberculosis and Health Association.

But before children can be taught, teachers must be trained to teach them and the school program must be so arranged that health education will have a place in it. During the past five years Dr. Galdston, in cooperation with the teacher training schools of New York City, has built up a health education curriculum to train teachers in health education facts and in the technic of imparting them.

The first term of the health education course as given by Dr. Galdston is devoted to teaching the essentials of health promotion and conservation. The make-up of the human body, its functions, personal hygiene practices, the causes of disease and principles of disease prevention are the topics discussed.

During the second term special problems are considered, such as contagious diseases of childhood, nutrition, teeth, eyes, ears and posture, mental hygiene of children and, finally, the technic of teaching health. Visits to places of health interest, such as the city health department, hospitals and headquarters of health agencies, augment the classroom instruction, and laboratory studies are carried on at the same time.

## GOVERNMENT INSPECTS 70 PER CENT OF MEAT

Federal meat inspectors passed on the fitness of more than 75 million food animals during 1928 and of that number about 250,000 animals and carcasses and about a million parts of carcasses were condemned, according to a statement issued by the American Public Health Association.

The inspection service of the federal government is limited to establishments engaged in interstate or foreign business. Thus it covers about 70 per cent of the meat and meat products in the United States. The inspection begins with the live animals and covers all operations in the handling. It includes supervision over the materials used in curing; even the water used is under supervision.

Get health. No labor, effort nor exercise that can gain it must be grudged.—*R. W. Emerson.*

## OFFICE FATIGUE MAY BE DUE TO WRONG DIET

"Four-o'clock-itis," a disease that afflicts almost all office workers, may be due to insufficient or improperly balanced diets, an investigator at Temple University in Philadelphia has recently announced.

Twenty feminine office workers were observed for four weeks as to their working capacity. One group of five was given a light lunch each afternoon consisting of cake, candy and sweetened orangeade. Two other groups were supplied with the food four days a week, while a fourth was kept as control.

Elaborate tests with delicately adjusted instruments were used to test the working capacity, speed, endurance and muscular coordination of the girls. Those who had the daily refreshment had the highest working rate and those who had it at least four times a week did practically as well, all being superior to the control group.

On the basis of these results, Dr. Thaddeus L. Bolton, who made the investigation, recommends that an emergency ration of food of high sugar content will spur flagging energies and supply the calories needed for the rest of the day. The tests also lend support to the opinions of those who hold that reducing diets impair the efficiency of the modern business girl.

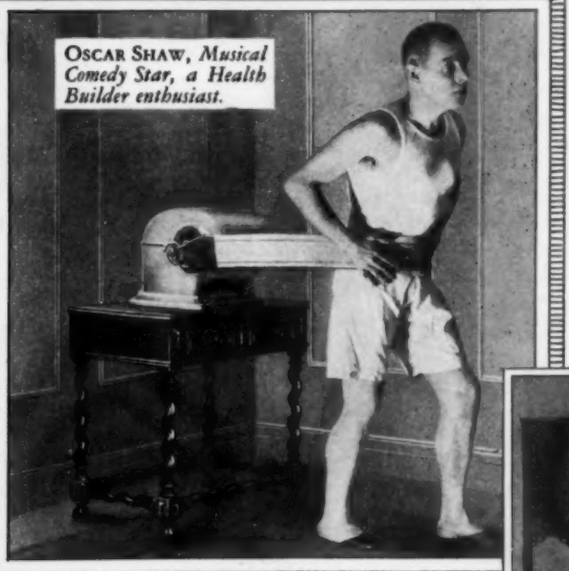
---

## CHILDREN GET TYPHOID AT SUMMER CAMPS

Forty-seven New York children returned from a summer camp in Pennsylvania with typhoid fever. Health department investigators went to the camp immediately after learning of the outbreak to determine the source of the infection. Careful checking attached no suspicion to the water or milk supply, but it was found that the camp cook had had typhoid fever and tests were begun to determine whether she was a carrier. These tests had not been completed at the time the department made its report, but the fact that a similar outbreak had occurred at the camp two years ago when the same woman was employed leads them to believe she is the cause.

"This case should teach persons sending their children away to summer camps the necessity of searching inquiries to learn of sanitary conditions at the camp," declared the health commissioner. "It also shows what we have repeatedly emphasized, the necessity of a thorough investigation and medical examination of all cooks and other kitchen and dining room help employed at such camps."


# KEEP FIT in 15 minutes a day



OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

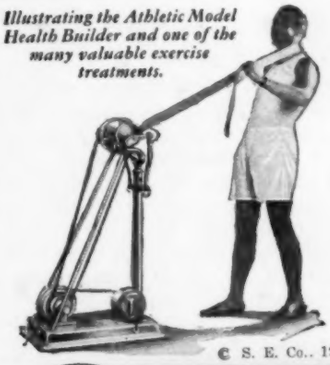
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* KEEP FIT—without waste of time or effort.

*Oscillate Your Way to Health*

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and aids in general reduction of body weight.

*Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.*



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*The Result of Years of Development*

No other appliance can produce the same effects as the Health Builder. Improved year by year, as a result of long study and research by an eminent physician, the action of the Health Builder is perfectly synchronized with human muscle tone.

*A Health Builder for Every Requirement*

Ideal for home use is the Universal Home Model, a compact, enclosed Health Builder. The Athletic Model is very popular for clubs, home gymnasiums, colleges, health centers, institutions, steamships, etc., while the handsome De Luxe Cabinet Models combine utility with distinctive beauty.

*Health Facts for You—FREE!*

Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

Sanitarium Equipment Co.
Room AW-1857 Battle Creek, Mich.

Choice of 80,000 Because Medically Correct

The Battle Creek Health Builder Keeps You Fit!

# Edgar stages a tantrum

Stern parents in the bustle and mustache era prepared for rebellion when castor oil was administered to the offspring.

Now even the mildest protests are unheard of because little Edgars are given Kellogg's Tasteless Castor Oil.

* * *

Tasteless because it is super-refined by a patented process. No other castor oil is refinery-bottled. That is why Kellogg's always reaches you fresh, tasteless and wholesome . . . untouched from refinery to you. No saccharin, benzyl alcohol, flavoring have been added.

## KELLOGG'S

*The Original*

## TASTELESS Castor Oil

THERE IS NO SUBSTITUTE FOR PURITY

Never sold in bulk but always in the original bottles. 1 oz. (1 dose), 3 oz. and 7 oz. home-size bottles. Enclose 10c in stamps for trial bottle.

Tested and Approved by Bureau of Foods, Sanitation and Health of GOOD HOUSEKEEPING MAGAZINE 1927

Sold by all druggists.

Walter Janvier, Inc., 121 Varick Street, New York
H-11-29


## CLINICS CARRY HEALTH TO HAITIAN PEASANTS

By automobile, horse, motorboat and aeroplane, modern medicine is being taken to the natives of Haiti. Rural clinics held weekly, biweekly or monthly, depending on the accessibility of the place, are perhaps the most successful means the Public Health Service has employed to fight disease and superstition on the island, the director general of the service declares in his annual report.

Haiti's great scourges are malaria, yaws and intestinal parasites. The visible evidence of healing as well as improvement in health after treatment has a powerful effect on the natives. After such demonstrations it is easy to get them to the hospitals for necessary operations and other treatments. The clinics have done more than any other agencies to put into ill repute the Papa Loi, as the native witch doctor is called.

Keeping up the rural clinics is difficult work. No district boasts smooth highways and all districts have rugged mountain roads that wear and pound a motor car to pieces in a short time. Sometimes the clinics are held in mud huts, small, unlighted and unventilated, with no furniture or equipment of any kind. Standard dispensary buildings have been built in fifty-nine communities, however, and others are being erected as fast as the funds will permit.

## MARYLAND COUNTY WINS NEGRO HEALTH AWARD

Anne Arundel County, Maryland, was awarded the silver trophy offered each year by the National Negro Better Business League for the best county-wide negro health campaign carried on by any rural community in the United States, the Maryland department of health announces. This is the third time the award has come to Maryand.

One day of the program was devoted to health in the homes and to personal and home hygiene; another to community hygiene; one to school health and one was set aside as a general clean-up day. A special effort was made to destroy the breeding places of flies and mosquitoes, to clear away refuse and to clean and paint.

---

If you have health you probably will be happy; and if you have health and happiness, you will have all the wealth you need, even if not all you want.—*Elbert Hubbard.*

---

It's difficult to make a good grade with a bad tooth.


## Clapp's

ORIGINAL APPROVED
BABY SOUP
AND
STRAINED VEGETABLES

*The Badge of Health Foods*
In Sealed Glass Jars

# For Infant Feeding

*TO SUPPLEMENT THE MILK DIET*

Prescribed by over 5,000 Specialists—

*Because* they are scientifically prepared under surgical standards of cleanliness and supply the elements needed for sound growth.

Used daily by thousands of Mothers—

*Because* they cost less than if made at home and save a Mother at least 24 hours a week kitchen time and give her these extra hours to be out of doors with baby.

*Because* they are easily carried, keep indefinitely when sealed, are ready to use except for diluting and heating and so are equally convenient for feedings at home or traveling.

**Clapp's Baby Soup.** An appetizing combination of Beef Juice, Vegetables and Cereals.

**Clapp's Wheatheart Soup,** a combination of Vegetables, Cereals, and the Wheat Germ which supplies Food Iron and VITAMINES A and E abundantly.

**Clapp's Strained Vegetables**
Spinach, Carrots, Asparagus, String Beans, Peas, Beets, Tomatoes, Prunes and Apricots.

Are all scientifically prepared from carefully selected materials, especially for growing babies and are immensely liked by them.

These are simply wholesome, healthful foods, packed for convenience and economy in 4 oz. glass jars—Soups, also in 14 oz. jars.

*Ask Your Doctor*
*and write us for your Dealer's name*

HAROLD H. CLAPP, Inc.
1340 University Ave., Rochester, N. Y.

## NEW YORK WILL HELP JUNIORS FIND JOBS

Public education facilities have been developed to a high point in the United States. But what of the thousands of children who cannot and do not use these opportunities? The New York state department of labor is beginning to find the answer to this question with its newly created division of junior placement. This division, the first of its kind in this country, is designed to give guidance and protection to the children who leave school at 14 or 15 to take out working papers.

Every child that applies to the state for a job will be given the sympathetic attention of an expert counselor. If a child has left school not from financial need because he was restless or because he was not interested, the counselor will urge him to return to school and will try to guide him to studies that appeal to him.

The child who must earn will be given the best available job, according to the plan as described in *The American Child*. Instead of allowing the youngsters to drift into occupations that may prove uncongenial, the counselors will make every effort to put them into work for which they show an aptitude. For instance, a boy who thinks he wants to learn printing may be helped into a printing house; and a girl who wants to design dresses may be put into an establishment where she may gain a foothold.

---

## CANCER SOCIETY TO SELL CHRISTMAS BOOKLET

Cancer caused the deaths of approximately 110,000 persons in the United States during 1928. In addition to the bodily and mental suffering involved the economic loss has been estimated at practically $8,000,000.

Yet cancer is curable in many cases if it is taken in time. Ignorance and fear on the part of its victims are responsible for many needless deaths. Only when they are able to recognize the early danger signals and willing to take treatment before it is too late will the death rate be lowered.

The American Society for the Control of Cancer is an agency that has dedicated itself to spreading information and to furthering research. To obtain funds for its program the society will sell this year a Christmas booklet for a shopping list and memorandum. These booklets are offered for $1 each and will be supplied in any quantity through local committees, the cancer society announces.


# Compare the *action* of this Penetrating Foam

***with ordinary tooth-pastes which fail to get down into crevices where food particles collect and decay begins***

Vastly more important than mere surface polishing of teeth is the daily removal of the lurking, decaying food particles and mucin deposits lodged in the tiny crevices of the teeth.

Some toothpastes merely polish the outer surfaces of the teeth. They cannot reach the hard-to-clean places . . . where decay starts.

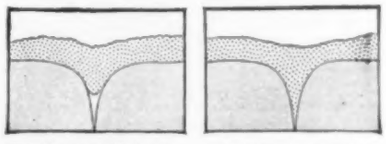
When you brush your teeth with Colgate's, you do more than safely polish the surface. Colgate's penetrating foam possesses a remarkable property (low "surface-tension"). This means that it penetrates into every tiny crevice. There it softens and dislodges the decaying impurities, washing them away in a detergent wave.

In this foam is carried a fine chalk powder, a polishing material used by dentists as safe yet effective in keeping teeth white and attractive.

If you have not yet become acquainted with Colgate's, may we send you a generous trial tube and an interesting booklet on the care of the teeth and mouth? Just mail the coupon.

More economical, too . . . The 25c tube of Colgate's contains *more* toothpaste than any other nationally advertised brand priced at a quarter.

***How Colgate's Cleans Crevices Where Tooth Decay May Start***



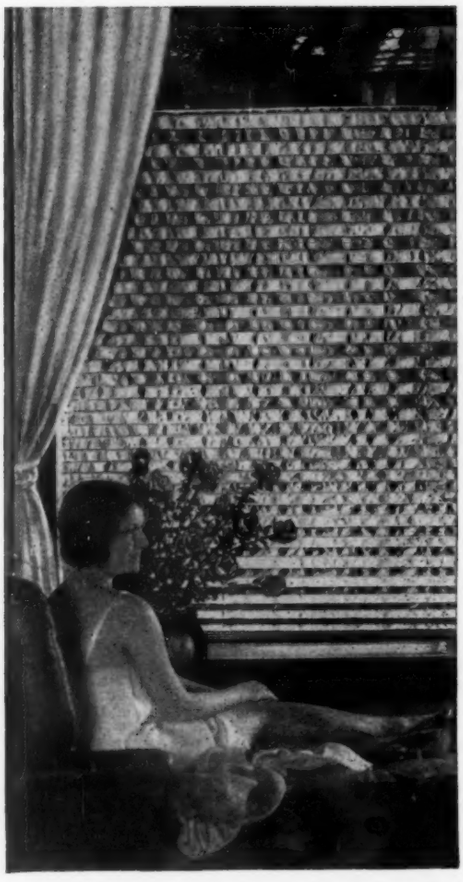
Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate deep down where the causes of decay lurk.

This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep down into the crevice, cleansing it completely where the toothbrush cannot reach.

COLGATE, Dept. B-1805, P. O. Box 375, Grand Central Post Office, N. Y. FREE

Please send a free trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy."

*Name*_____ *Address*_____



# Privacy
## with light and ventilation

ATHEY SHADES shade or screen any part of the window. They are not wooden slats and have no rollers, springs, catches or latches. They do not have to be jerked for adjustment. And because they may be lowered from the top, allow a flood of soft light to reach the back of the room.

Besides being practical, they are the most beautiful and attractive shade ever devised.

Athey

SHADES shade any part of the window from prying eyes or sun. ATHEY WEATHERSTRIPS with cloth to metal contact keep out all drafts.

**ATHEY COMPANY**
**6107 W. 65th St., CHICAGO**
In Canada:
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# You Need This-

*Complete Home or Office Gymnasium.* It gives you facilities at *home* for playful, health-building exercise—to strengthen weak muscles—to reduce flesh—to keep physically fit while indoors. Fits in 3¼ x 4½ ft. floor space—it is so compact. Durable tubular metal construction, attractively finished. Reasonably priced and easy payments.

GYMJUNIOR
Patented
*The Home Gymnasium*
Hundreds have been purchased for homes, clubs, physicians' and dentists' offices, hospitals, welfare rooms, etc.
*Write for Literature*
FLOOR BARS FOLD UP WHEN NOT IN USE
Punching Bag
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GYM JUNIOR CO.
534 Gregory Ave.,
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# *Of Great Value to Mothers*

School children can be positively protected from embarrassing head troubles, so easily contracted at play or in crowds, by weekly use of *Derbac*. Moreover, its pine tar benefits the scalp and its cocoanut oil keeps the hair soft and lustrous.

Endorsed by physicians, nurses, hygiene teachers, and mothers all over the United States.

Write for our booklet: *"Wouldn't We Look Funny Without Any Hair?"* In color, illustrated, written especially to interest children.

**Derbac**
**Unique health shampoo**
The only shampoo especially for children
*At your druggist's or send 25c for a 20-shampoo cake*
**Cereal Soaps Co., Inc.**
**Dept. H-11, 334 E. 27th St., N. Y.**

**The Trowbridge Training School**
A Home School for Nervous and Backward Children
*The Best in the West*
State Licensed
**E. Haydn Trowbridge, M.D.**
412 Chambers Bldg. Kaasns City, Mo.

**Gomco**
VEST POCKET SYRINGE
**STERI-CASE**
ESPECIALLY FOR THE DIABETIC
*A compact Syringe carrying case assuring COMPLETE Syringe sterilization and a means of sterilizing the flesh.*
AT ALL SURGICAL SUPPLY STORES
The GOLDSTEIN MFG. CO., Ltd.
79-81 ELLICOTT ST. BUFFALO, N.Y.

• • • *SUBSCRIBE NOW FOR HYGEIA!* • • •


## HOW NEW YORK EDUCATES FOOD HANDLERS

Novel and varied are the excuses that are offered by restaurant, delicatessen and grocery owners who have violated New York's sanitary code when they are haled before the trial board of the department of health.

Many violations are the result of ignorance and inexperience and the offenders are eager to comply with the regulations once they understand. If it is apparent that the violation is wilful, the guilty parties are sent to court.

Blaming it on the chef is a favorite alibi of the restaurant owner. The grocer blames the clerk for selling spoiled cantaloups. "I was too busy," he protests. The board finds that he was also too busy to notice soiled milk bottles lying around and sends him to court to impress the lesson of keeping food clean and wholesome.

The most popular excuse, according to the story told in the bulletin of the health department, is "The spoiled goods were on the shelf, but not for sale." Another is "I did not know the goods were bad until the inspector told me." Many times these trite excuses appear to be true and the offenders are given another chance because many of them are new in the work. This contact with the health department gives them a new view of themselves as guardians of the public health.

## ADD MOBILE LABORATORY TO SANITARY EQUIPMENT

A mobile laboratory equipped to test every kind of water supply has recently been placed in operation by the state health department of Illinois to facilitate the sanitation of streams, lakes, ponds, wells and public water supplies.

Automobile transportation has multiplied so tremendously the problem of providing safe water for drinking and bathing that health authorities must prevent water pollution on a larger scale than ever before. Water purification and sewage disposal processes require laboratory tests to be made constantly at the central plants and along the streams and it is for this work that the laboratory on wheels is to be used.

An Italian baby has many garments adorned with fine needlework and is wrapped in a four yard fascia, adjusted under the shoulders and extending down over the feet, which makes it look like a little mummy, according to the description given in the bulletin of the New Jersey department of health.

# FILL THE FLAGONS

## FOR THE FEAST WITH *Sparkling* ORANGE Crush-Dry

**IN THE EBONY BOTTLE**

*At all groceries and drug stores. Buy a case of 24 and save money.*

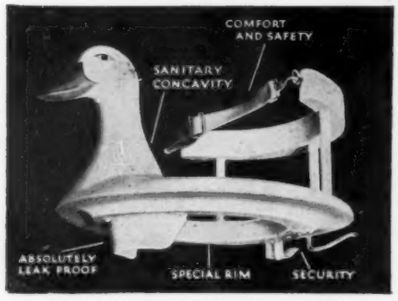
For Thanksgiving — here's a new drink as joyous as the day! A zestful beverage bubbling over with gayety and goodness — Orange-Crush-Dry, the Sociable Drink.

It's the luscious golden juice of prime tree-ripened oranges, freshly squeezed. There's a spicy dash of lemon juice fruit acid added to give it *tang!* A delicate hint of the peel for *bouquet!* Tiny globules of fruit pulp for that inimitable *fresh* fruit *taste!* And it's charged with purest carbonated water to give it that popular dry *flavor!* That's what makes it so exhilarating, and so appetizing.

Never confuse Orange-Crush-Dry with any other carbonated "orange" drink. Orange-Crush-Dry always has that fresh-fruit taste. Orange-Crush-Dry contains the healthful fruit vitamins. Ask for it by its full name—Orange-Crush-Dry—and you'll be doubly thankful.

**ORANGE-CRUSH COMPANY**
314-318 West Superior Street
Chicago, Ill.

# SPECIALISTS RECOMMEND IT




Nationally-recognized Specialists everywhere are recommending DOO-TEE, the scientifically-designed Infant Trainer.

*Prevents Fear.* The duck's head, extending solidly up in front of the child, and the comfortable back rest with safety strap hold baby securely, and subconsciously instil confidence.

*Hygienic.* All water is diverted directly into the bowl, thus keeping the bathroom floor wholesome and clean. Further, the child's legs separate uniformly, insuring body cleanliness.

DOO-TEE is the *only* trainer that fulfills every training requirement.

# DOO-TEE

*Sold by Leading Department & Baby Stores*

DOO-TEE CORPORATION
*615-23rd Avenue · Oakland, California*

Enclosed find check to the amount of $4.95, for which you will ship one Doo-Tee Infant Trainer. Check color desired: Pink ☐ Blue ☐ White ☐

*Name*_____

*Address*_____



# SAFETY EDUCATION *material*

ARE you interested in material for safety and health teaching for children?

**SAFETY EDUCATION MAGAZINE**

contains practical lesson plans, posters, articles, plays, stories, news items and other valuable features. Is used widely in schools and communities throughout the country.

Subscription **$1.00** per year

SAFETY EDUCATION MAGAZINE
ONE PARK AVENUE · NEW YORK CITY


## NUMBER OF RATS EQUALS HUMAN POPULATION

Every rat that is allowed to live in the United States does an annual damage of at least two dollars, the U. S. Department of of Agriculture has estimated. The number of rats now alive is estimated as equal to the number of human beings; therefore every American is supporting one rat.

Rats are extremely difficult to kill. No other animal will kill them; they are suspicious of poisoned food and they avoid traps with almost human intelligence. The department recommends the use of red squill powder, a dried plant material which kills rats but does not harm most other animals and which rats will sometimes eat in their food.

---

Health lies in labor and there is no royal road to it except through toil.—*Wendell Phillips.*


# For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does just what it is intended to do and no more—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

Little Rock Surgical Company
Donahey Bldg. LITTLE ROCK, ARK.



CAMP TRADE MARK

## Maternity Supports

Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

Special feature—Original patented adjustment supplying sacro-iliac support and easy regulation to size and pressure as required.

Wonderful reaction to normal health, and mental and physical buoyancy.

*Write for special information.*

S. H. Camp & Co.
Jackson, Mich.
*Mfgs.*

Fisher & Burpe, Ltd., Manufacturers for Canada
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## PHYSICIANS PRESCRIBE

medicated steam **INHALATIONS** in treating

**ASTHMA**
**COLDS--CROUP**
**LARYNGITIS**
**BRONCHITIS**

and all respiratory ailments. Vapors are best prepared with this clean, SAFE device.

**$3.50,** complete

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*Requires no watching. Shuts off automatically when empty.*

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At all drug stores, or direct from

**American Electric Vaporizer**

AMERICAN SUNDRIES COMPANY
116 South Portland Avenue Brooklyn, New York

STOP coughs and colds before they start. Prevent and treat seasonal, infectious nose and throat ailments with properly prescribed solutions applied with a DeVilbiss atomizer. For years physicians have prescribed DeVilbiss atomizers. Ask your doctor or druggist about them.

THE DeVILBISS COMPANY, Toledo, O.

**DeVilbiss**
*Atomizers - Nebulizers - Vaporizers*



# PARENTS, know your job.

Bring up your child in the best possible way. In 100,000 progressive homes THE PARENTS' MAGAZINE is being read for its authoritative articles on all the problems connected with the rearing of children from crib to college.

*Typical Articles:* How to Get Obedience—Preventing Colds—Should Kids Read Comics?—New Ideas on Discipline—What to Tell Children About Sex—Scientific Baby Care—Preparing Your Child for Adolescence

Address The Parents' Magazine,
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**SPECIAL OFFER—$2.00**
(Money back if not satisfied)
(1) The Parents' Magazine for one full year, and
(2) Three extra numbers to new subscribers ordering within two months, (3) A copy of "The Intelligence Test for Parents", with answers.

*Published with official cooperation of Teachers College, Columbia Univ.; and the Universities of Minnesota, Iowa State, and Yale.*

## BRONCHOSCOPE SAVES INFANT LIVES

The modern science of bronchoscopy has greatly reduced the number of infants that choke to death on foreign objects. The bronchoscope is an electrically lighted tube that can be inserted into the lungs through the mouth and windpipe and through this tube forceps can be manipulated so that foreign bodies can be removed.

Most cities now have at least one physician who is skilled in the use of this instrument and in most cases he can locate and remove a foreign body within a minute or two, Dr. Kenneth A. Phelps states in the *Northwestern Health Journal.*

Dr. Phelps says that nuts are responsible for the deaths of more infants than any other foreign body. On no account, therefore, should a baby be given nuts in his food. No child should be permitted to put into his mouth small inedible articles such as coins, pencils, toothpicks and such things as babies are frequently allowed to chew on while cutting teeth. He should never be allowed to play with beads, seeds, buttons, small toys, jackstones or pieces of toys.

If in spite of vigilance the baby does get something into his throat the mother should consult a physician immediately and have the object removed or else the child's life will be in jeopardy.

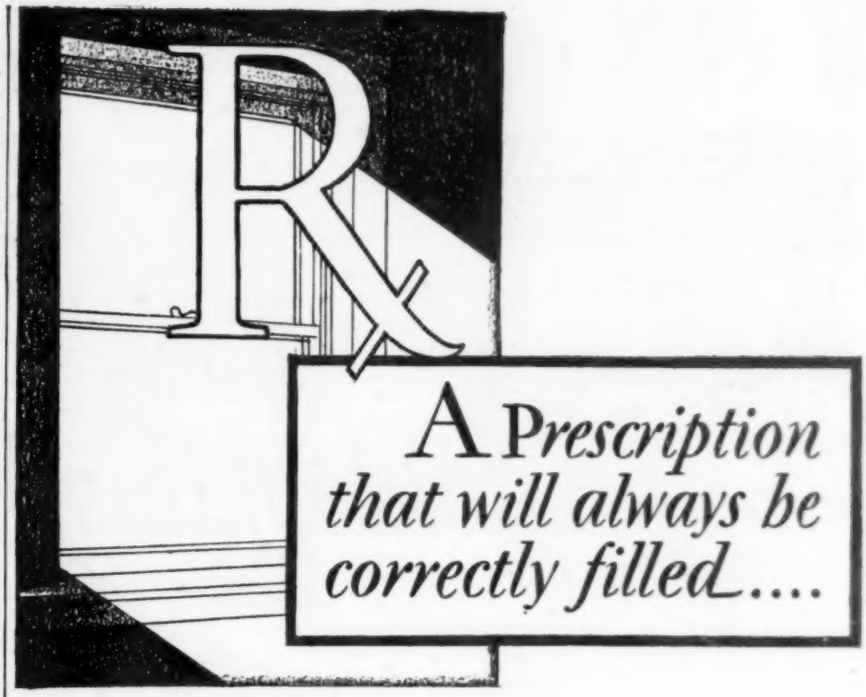
---

## U. S. P. H. S. USES DUSTER TO SPREAD LARVISIDE

A one man apparatus for fighting mosquitoes by scattering Paris green over breeding areas too large for hand dusting and yet too small for the economical use of an airplane was tried out during the past season by the U. S. Public Health Service.

A light weight portable dusting unit consisting of a power generator, an electric blower and a small dust hopper is used on a light skiff-type boat. This equipment will dust effectively up to 525 feet from the path of liberation. The generator has sufficient power to operate several blowers. Thus the device is flexible enough to be applicable to areas varying from 1 to 100 acres. The dusting activity and the guiding of the boat have been accomplished by one person.

The investigators called attention to an important point brought out by these studies with reference to Paris green as a larvicide. Paris green varies greatly in its lethal power and it is imperative that each lot be tested for its toxicity. A mixture of 15 per cent Paris green with hydrated lime was found to give the best results.




NO CHANCE for inferior ingredients and improper compounding when the doctor's prescription says: "*Sun treatments through Helioglass.*"

For extensive tests have proved that Helioglass at all times permits the passage of a major portion of the sun's vital ultra-violet rays, whereas ordinary window glass, no matter how clear, sifts them out. Furthermore, this valuable property is permanent in Helioglass.

And now that the cost of Helioglass has been reduced, it is being even more widely recommended and used, not only in hospitals, sanitariums and schools, but for nursery, bedroom and sun-parlor windows in the home. You will be genuinely interested in knowing how inexpensive an installation of Helioglass in your home will be. Write for information.

PITTSBURGH PLATE GLASS CO.
PITTSBURGH, PA.

Warehouses in All Principal Cities of the United States

HELIOGLASS

HĒLIOGLASS
*An Ultra-Violet Ray Glass*

# Bacillus Acidophilus Milk Lederle

## Why you should drink Lederle Milk

MOST of the germs in our intestines are germs of decay. They thrive on an ordinary diet. They breed rapidly and generate poisons which are absorbed by the system. Symptoms may be prevented and loss of health from this cause avoided by use of Bacillus Acidophilus Milk.

*Accepted by Council of Pharmacy and Chemistry of the American Medical Association.*

When these harmful organisms are replaced by the beneficial Bacillus Acidophilus, your health, insofar as it is influenced by the bacterial content of the intestines, will be normal.

Be particular to ask for Lederle's when you order Bacillus Acidophilus Milk. That name is a guarantee of purity and effectiveness. Doctors everywhere have been prescribing Lederle's Bacillus Acidophilus Milk for years and its prophylactic benefit has been proved in all those conditions in which the action of the Bacillus Acidophilus could be of value.

**Lederle** (BACILLUS ACIDOPHILUS) **Milk**

*Lederle's Bacillus Acidophilus Milk is on sale at all high-class drug stores. Buy it at fountains for lunch. Your druggist will gladly deliver it regularly at your home. It is served at the better hotels, restaurants and clubs.*

LEDERLE ANTITOXIN LABORATORIES, 511 Fifth Ave., New York